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THE JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF

GREAT BRITAIN AND IRELAND.

VOL. XXXVIII.

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1908.

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NOTICE.

For convenience of reference, all volumes of the new (imperial octavo) series which began in 1898 are numbered in continuation of the old demy octavo series Vols. I–XXVII. Thus Vol. I of the imperial octavo series = Vol. XXVIII of the old series; and the present Vol. XXXVIII corresponds to N.S. Vol. XI.

The Index to the present volume includes an index to the Institute's monthly publication MAN for the year of issue 1908.

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JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF GREAT BRITAIN AND IRELAND.

ANNUAL GENERAL MEETING.

JANUARY 28TH, 1908.

Professor D. J. CUNNINGHAM, M.D., D.C.L., F.R.S., *President, in the Chair.*

The Minutes of the last Annual General Meeting were read and confirmed.

The PRESIDENT appointed Messrs. N. W. THOMAS and C. SALAMAN Scrutineers, and declared the ballot open.

The SECRETARY read the Report of Council for 1907, which was adopted unanimously (p. 2).

The TREASURER presented his Report for 1907, which was similarly adopted (p. 5).

The PRESIDENT delivered his Anniversary Address (p. 10).

A vote of thanks was proposed to the President by Sir EDWARD BRABROOK, who asked, in the name of the Institute, that the President would allow his address to be printed in the *Journal*. The motion was seconded by Dr. KEITH and carried by acclamation.

The SCRUTINEERS handed in their Report, and the following were declared to be duly elected as Officers and Council for the year 1908–9:—

President.—Professor W. Ridgeway, M.A., Litt.D., F.B.A.

Vice-Presidents.

Col. Sir T. H. Holdich, K.C.M.G., K.C.I.E., C.B. | Sir H. H. Johnston, G.C.M.G., K.C.B.
Professor A. Thomson, M.A., M.B.

Hon. Secretary.—T. A. Joyce, Esq., M.A.

Hon. Treasurer.—J. Gray, Esq., B.Sc.

Council.

W. Crooke, Esq., B.A.
O. M. Dalton, Esq., M.A., F.S.A.
M. L. Dames, Esq.
J. Edge-Partington, Esq.
A. J. Evans, Esq., M.A., Litt.D., F.R.S., F.S.A.
T. Heath Joyce, Esq.
A. Keith, Esq., M.D.
A. L. Lewis, Esq., F.C.A.
Sir R. B. Martin, Bart.
A. P. Maudslay, Esq.
C. S. Myers, Esq., M.D.
Professor W. M. F. Petrie, D.C.L., F.R.S., F.B.A.
R. H. Pye, Esq.
A. S. Quick, Esq.
Professor Carveth Read, M.A.
W. W. Skeat, Esq., M.A.
Sir R. C. Temple, Bart., C.I.E.
E. Westermarck, Esq., Ph.D.
W. Wright, Esq., M.B., D.Sc.
G. Udny Yule, Esq., F.S.S.

Professor RIDGEWAY, being unavoidably prevented from being present at the meeting, was not formally installed as President.

A vote of thanks to the outgoing members of Council was proposed by Mr. LEWIS and carried unanimously.

A vote of thanks to the Scrutineers was carried on the motion of the TREASURER.

REPORT OF THE COUNCIL FOR 1907.

The Council is happy to be able to report another year of substantial progress. The number of new fellows, though falling a little short of the record constituted last year, attains, nevertheless, the satisfactory total of thirty-five. The following table shows the numerical gains and losses of the Institute :—

	Honorary Fellows.	Corresponding Fellows.	Local Correspondents.	Ordinary Fellows.		Total Ordinary	Total Membership.
				Compounding.	Subscribing.		
On 1 Jan., 1907 ...	45	6	31	78	310	388	470
Loss by death or resignation.	−1	1		−2	−12	−14	−16
Since transferred				+2	−2		
Since elected ...			+3	+3	+32	+35	+38
1 Jan., 1908 ...	44	5	34	81	328	409	492

Among the losses which the Institute has suffered through death are the Reverend Lorimer Fison, Honorary Fellow, Messrs. F. T. Elworthy, G. G. Lancaster, W. E. Malcolm and Dr. A. MacTier Pirrie, Ordinary Fellows of the Institute.

The Reverend Lorimer Fison, who died on December 29th, was well-known as an active contributor to Australasian anthropology. After some years

of missionary work in Fiji he went to Australia, where the rest of his life was spent. He was a contributor to Morgan's *Systems of Consanguinity*, and subsequently contributed a number of papers to the Institute's *Journal*, some in collaboration with Mr. A. W. Howitt. He was also the author, with Mr. Howitt, of *Kamilaroi and Kurnai*, and shortly before his death had produced *Tales from Old Fiji*.

Frederick Thomas Elworthy also died in December. His early works dealt with the phonology and grammar of Somersetshire, but more recently he had turned his attention to the investigation of certain branches of popular superstitions. *The Evil Eye* and *Horns of Honour* contain the results of his researches in this field. He was the contributor of a paper on "Perforated Stone Amulets" to *Man*, 1903, 8.

The promising career of Dr. A. MacTier Pirrie was cut short at the early age of twenty-eight. Appointed a Carnegie Research Fellow of the University of Edinburgh he went to the Sudan to carry out anthropological investigations under the auspices of the Wellcome Research Laboratories, Khartum. In this work he was eminently successful, and he returned to this country in July with much important information and many valuable specimens and photographs. Unfortunately, he had contracted a virulent form of tropical fever to which he succumbed on November 12th. The notes which he has left are at present being arranged for publication, and his collection will also be made the subject of a report.

Mr. W. E. Malcolm was a Fellow of long standing, having become a member of the Ethnological Society in 1855.

Anthropologists will also regret the loss of the following explorers and students whose works have contributed much, directly or indirectly, to the study of mankind.

Dr. Arthur Baessler, well-known for his researches in Oceania and South America, died towards the end of the year. He was the author of several books, and the museums in Berlin, Dresden and Stuttgart have benefited much from his activity as a collector.

The death of Dr. Carl Bovallius, the distinguished Swedish anthropologist and zoologist, was announced in March. As an explorer he had traversed and surveyed large tracts in Venezuela, Nicaragua and British Guiana. His scientific works were written to a large extent in English, and the British Museum and the Cambridge University Natural History Museum had benefited by his donations.

Don Alfredo Chavero, who died in October, was an eminent student of Mexican archæology, and his copious writings on that subject are well-known to Americanists.

The Société d'Anthropologie de Paris has lost one of its past Presidents in the person of Professor Mathias Duval, whose contributions to science belong chiefly to the domain of anatomy and histology.

Another distinguished Americanist, Albert Samuel Gatschet, of the Bureau of American Ethnology, died in March. A Swiss by birth he had been attached to the Smithsonian Institution, and had made many expeditions amongst the North American Indians for the purpose of collecting ethnographical and philological data.

Dr. Alfred Kirchhoff, who died in February, was best known as a geographer, but much of his work lay within the sphere of anthropology.

The Reverend William George Lawes, a colleague of the celebrated Chalmers, and one of the pioneers of exploration in New Guinea, died in August. Most of his published work is to be found in the *Geographical Journal*.

The death of Professor Leon Lejeal, another Americanist, is all the more to be regretted since he was unable to work out entirely all the material which he had collected. He was the General Secretary of the Société des Américanistes de Paris and had previously done good service at the Trocadero Museum.

The ethnographical and philological researches of Professor de Calassanti-Motylinski among the Tuareg are well known, and his collection of rock inscriptions was a valuable piece of work. He died in March in Constantine, where he was Director of the Medersa.

Dr. Julius Naue, editor of *Prähistorische Blätter*, also died this year. Perhaps his best known work was *Die Vorrömischen Schwerter aus Kupfer, Bronze und Eisen* (reviewed in *Man*, 1904, **24**).

The death of Peter von Stenin is announced from St. Petersburg. His numerous publications included various treatises of ethnographical interest dealing mainly with Russia.

Meetings.

During the year ending December 31st, 1907, twelve ordinary and two special meetings were held. At these, eighteen papers were read, nine dealing with ethnographical subjects, seven with archæological, and two with physical; and five exhibitions of specimens were made.

Huxley Memorial Medal.

The Huxley Memorial Medal this year was presented to Professor Edward Burnett Tylor on the occasion of his 75th birthday in recognition of his life-long services to the science of anthropology. The Council further took the opportunity of dedicating to him the current volume of the *Journal* of the Institute, and desire once more to record their deep sense of the debt which anthropologists throughout the world must ever owe to his monumental works.

Publications.

During the year two half-yearly parts of the *Journal* have been issued, viz., Vol. XXXVI, 2 (July–December, 1906) and Vol. XXXVII, 1 (January–June, 1907). Of the former 86 copies have been sold, of the latter 90. The combined sales, therefore, constitute a record.

With regard to *Man*, the usual twelve monthly parts have been issued. The amount already received from subscriptions is larger than that of last year, and the Council believes that *Man* is slowly but surely increasing its circulation, and would wish to call attention to the great value of this publication as a means of procuring presentation copies of books for the Library. It is recommended that the present system of subscription be continued during the coming year; but at the same time the Council thinks that it may be found possible to reduce the price of *Man* at the expiration of that period; the Council believes that such a measure would give considerable impetus to the sale of *Man* among the outside public.

The Council further delegated three of its members to form a joint Committee with three nominees of the Council of the Folklore Society to prepare and publish a Bibliography of Anthropology and Folklore containing works published in the British Empire during 1906. The volume was issued in December, and it is proposed that a similar volume shall be issued annually.

Library.

The list of accessions to the Library constitutes another record. Arrears of binding have to a large extent been made up and additional shelves have been erected. The Exchange List has been revised and increased by the addition of five periodicals, four foreign and one English.

External.

The deputation to the Prime Minister on the subject of the Anthropometric Survey was received on March 5th and an account of the proceedings will be found in Vol. XXXVII of the *Journal*, p. 424. The Council is glad to learn that the promise made to the deputation by the Prime Minister has been fulfilled by the introduction of Anthropometry into Public Elementary Schools under the Education (Administrative Provisions) Act. It is also gratified to hear that Eton has shown the way to the Public Schools by introducing a very complete system of Anthropometry under the supervision of the Institute's Treasurer.

Augmentation of Title.

In accordance with the intention expressed in the Report of Council for last year, application was made for permission to assume the title "Royal Anthropological Institute of Great Britain and Ireland." The two special general meetings necessitated by the Company's Act for the purpose of re-registration were held, and the Council are pleased to record that His Majesty The King has been graciously pleased to command that the Anthropological Institute shall be henceforward known as "The Royal Anthropological Institute of Great Britain and Ireland."

TREASURER'S REPORT FOR THE YEAR 1907.

On the 31st December, 1907, the assets of the Institute were as follows:—

	£ s. d.	£ s. d.
Assets (not immediately realisable):—		
Books in Library, Publications, Furniture as per estimate of 1903 ...		885 0 0
Realisable Assets:—		
£300 Metropolitan Consolidated 3½ per cent. Stock, present value	300 0 0	
Balance at Bank	247 2 1	
Cash in Hand	3 0 0	
Petty cash	4 14 2	
Country cheques (cashed after 31.12.07)	3 4 0	
Arrears of subscriptions, £132 8*s.* 0*d.* valued at	52 10 0	
		610 10 3
Total Assets		£1,495 10 3

Against which there are liabilities:—

	£ s. d.	£ s. d.
Anthropological *Notes and Queries* ...	63 18 8	
Library Fund	5 4 10	
		69 3 6

Leaving a surplus, if all our property were realised, of £1,426 6 9

Considering only our immediately realisable assets:—

	£ s. d.
These amount to	610 10 3
Less	69 3 6
	541 6 9

The state of ideal solvency also implies, as in my last report, the following additional liabilities:—

	£ s. d.
Journal (1907)	250 0 0
Man (December, 1907)	16 0 0
Unexpended life subscriptions	502 0 0
Total	£768 0 0
Our immediately available Reserve Fund is	541 6 9
Leaving a deficit in the Reserve Fund of	226 13 3

The Financial Position of the Institute.

The total receipts of the Institute this year are £54 in excess of last year's.

The receipts from annual subscriptions are £58 more than last year, and £105 has been received from life subscriptions, which may be compared with £126 received from life subscriptions in 1906.

The receipts from sale of *Journal* are £20 more than in 1906, thus continuing the advance in these sales recorded in my last report. The net receipts from *Man* are only about £1 less than last year, which compares favourably with the drop of £28 recorded in my last report.

The total expenditure this year is £38 more than last year, for about £10 of which increase the *Journal* and *Man* are responsible.

The net increase in our membership this year has not been so large owing to a greater loss by death or resignation. Though we have now a considerable Reserve Fund in hand, owing to the comparatively large number of life subscriptions we have received within the last two years, a further increase in the number of our annual subscribers is desirable, to make the financial position of the Institute thoroughly satisfactory. There is every sign that, for this increase in our membership, we shall not have long to wait.

J. Gray, *Hon. Treasurer.*

ROYAL ANTHROPOLOGICAL INSTITUTE

Receipts and Payments

RECEIPTS.	£ s. d.	£ s. d.	£ s. d.
BALANCES in hand, January 1st, 1907 :—			
Cash in Bank	161 16 10		
Cash in Hand	6 3 4		
Country cheques received but not paid until after 31st December, 1906	23 8 0		
		191 8 2	
Less Balances owed as per 1906 Account :—			
Library Fund	13 6 6		
"Notes and Queries"	59 14 8		
		73 1 2	
			118 7 0
SUBSCRIPTIONS :—			
Five Life Subscriptions		105 0 0	
Ordinary		538 13 0	
Arrears		50 8 0	
Advance		35 14 0	
			729 15 0
SALE OF JOURNALS	177 3 8		
Less Refund	12 0		
		176 11 8	
SALE OF HUXLEY LECTURES		2 10 6	
			179 2 2
"MAN"			
Net receipts		99 0 0	
Postages		14 1 0	
			113 1 0
ADVERTISEMENTS in *Journal*			4 0
„ „ "Man"			1 5 0
DIVIDENDS and Interest			13 7 2
LIBRARY FUND :—			
Balance, January 1st, 1907	13 6 6		
Grant	10 0 0		
		23 6 6	
Less Binding and Books	10 0 10		
Petty Cash	8 0 10		
		18 1 8	
			5 4 10
"NOTES AND QUERIES" :—			
Balance		59 14 8	
Received, 1907		4 4 0	
			63 18 8
HOBLEY'S "UGANDA": Balance			28 8 7
"PHYSICAL DETERIORATION": Balance			8 15 6
Bibliography			2 0
SUNDRIES			3 8 1
			£1,268 19 0

OF GREAT BRITAIN AND IRELAND.

for the Year 1907.

PAYMENTS.	£	s.	d.	£	s.	d.	£	s.	d.
RENT							135	0	0
JOURNAL				371	4	1			
Less refund	4	10	0						
	10	0	0						
				14	10	0			
							356	14	1
ADVERTISING							10	17	0
"MAN":—									
Printing and blocks	180	2	1						
Less refund	1	0	0						
				179	2	1			
Postage				14	1	0			
							193	3	1
SALARIES	123	10	6						
Less cheque not paid till after 31st December, 1907	7	10	0						
							116	0	6
HOUSEKEEPING							20	10	0
STAMPS AND PARCELS							57	15	6½
PRINTING AND STATIONERY							27	2	6½
LANTERN							4	5	5
GRANT TO LIBRARY							10	0	0
HUXLEY MEDAL							7	2	6
HOBLEY'S "UGANDA":—									
Balance as per contra				28	8	7			
Received 1907				16	0				
							27	12	7
"PHYSICAL DETERIORATION":—									
Balance as per contra				8	15	6			
Received 1907				12	10				
							8	2	8
INSURANCE							1	16	4
TRAVELLING							2	5	0
SUNDRIES							28	19	4
BALANCE AT BANK:—									
Deposit account				100	0	0			
Current account				147	2	1			
Cash in Hand				3	0	0			
Petty cash in hand				4	14	2			
Country cheques received but not paid till after 31st December, 1907.				3	4	0			
							258	0	3
Debit on Petty Cash, 31st December, 1906							3	12	2
							£1,268	19	0

We have examined the above accounts and compared them with the Books and Vouchers relating thereto, and find the same to be accurate.

(Signed) RANDALL H. PYE,
F. W. RUDLER, } *Auditors.*

January 10th, 1908.

ANNIVERSARY ADDRESS.

By the President, Professor D. J. Cunningham, M.D., D.Sc., LL.D., D.C.L., F.R.S.

ANTHROPOLOGY IN THE EIGHTEENTH CENTURY.

[With Plates I–V.]

I think we may say that, in so far as the Institute is concerned, 1907 has been, in many respects, an interesting and eventful year. Not the least important event has been the acquisition by the Institute of the prefix "Royal." We appreciate very highly His Majesty's gracious permission to add this qualification to our title. Scientific societies such as ours, have two somewhat different obligations to fulfil. In the first place, it is our bounden duty to do everything in our power by earnest and persistent research to extend the boundaries of anthropological knowledge. I do not doubt that it will be generally admitted, that this is an obligation which our Institute has not neglected. We have merely to cast our eye over the published "proceedings" to see that anthropology owes much to the members of this Institute. But, as I have said, we have a second duty imposed upon us. We have to reach the general mass of the people, and to kindle in them an interest in our work—and this, not alone with the view of enlisting recruits at home and abroad, who will add to the volume of original work turned out, but also with the view of impressing the public with the educational and practical advantages to be derived from anthropological study. The increased dignity which the addition to our title gives to the Institute will, I believe, operate beneficially in enabling us the better to carry out this important function. In any case, it marks a stage in the career of the Institute, and the occasion appears appropriate for recalling certain events which occurred at two other important stages in its history.

The Anthropological Society, which to a large extent must be looked upon as the direct predecessor of the Institute, was founded in 1863. For twenty years before this there had existed an Ethnological Society, but although it had on its roll some very eminent members—men whose names are held at the present day in the highest honour and reverence—the Ethnological Society cannot be said to have thriven in a degree equal to the importance of the subject it represented. Its roll of members was small and its output of work was inconsiderable.[1]

At that time anthropology was in a transition stage, and it was becoming apparent that its outlook must be enlarged enormously. Ethnology was no doubt

[1] It should be noted, however, that in 1846 its roll of members rose to 170.

a most important branch, but it filled only a portion of the horizon. Many other fruitful fields for research were gradually being opened up, and, besides all this, the sciences on which anthropology is built were expanding in every direction, and were in turn reacting upon the subject of which they formed the supporting columns.

In those days anthropologists were looked upon with some suspicion. They were regarded as men with advanced ideas—ideas which might possibly prove dangerous to Church and State. In London, as indeed might be expected, no opposition was offered to the formation of the Anthropological Society, but in Paris the first attempt to found a similar Society in 1846 was rendered futile by the intervention of the Government, and when finally, in 1859, the Anthropological Society of Paris was formed, Broca, its illustrious founder, was bound over to keep the discussions within legitimate and orthodox limits, and a police agent attended its sittings for two years to enforce the stipulation. The same fear of anthropology, as a subject endowed with eruptive potentialities, was exhibited in Madrid, where the Society of Anthropology, after a short and chequered career, was suppressed. It is indeed marvellous how, in the, comparatively speaking, short period which has elapsed, public opinion should have veered round to such an extent that at the present day there is no branch of science which enjoys a greater share of popular favour. Huxley's prophecy has come true. Speaking of anthropology in 1878 he said, "Whoever may be here thirty years hence . . . will find that the very paradoxes and horrible conclusions, things that are now thought to be going to shake the foundations of the world, will by that time have become parts of everyday knowledge, and will be taught in our schools as accepted truth, and nobody will be one whit the worse."[1]

The success of the Anthropological Society of London in the first few years of its existence was remarkable. Dr. Hunt, its founder, and its president for the first four years, was a young man of great energy, strong views and many accomplishments. When he resigned the Chair in 1867, the membership had reached the large total of 706,[2] and he spoke confidently of being able to increase the list to 2,000. I need not say that this anticipation was never realised.

I do not think that the popularity of the Society in these its early days is difficult to explain. Professor Huxley thought that the large audiences which are wont to throng the Anthropological Section of the British Association, are due to the innate bellicose instincts of man, and to the splendid opportunity afforded by anthropology for indulging these propensities.

There cannot be a doubt that the talk in the Anthropological Society was of a distinctly volcanic character. Politics and religion were not excluded from its debates, and the position of the negro in the scale of humanity—at that time a very burning question—frequently cropped up in its proceedings. Dr. Hunt

[1] British Association, Dublin, 1878. Department of Anthropology—address by Professor Huxley.

[2] The Anthropological Society of Paris in the preceding year had a membership of 222.

strongly opposed the doctrine of human equality; he thought that it would be as difficult for an aboriginal Australian to accept civilization as "to get a monkey to understand a problem in Euclid"; and he denounced those who differed from him in no unsparing manner.

A good field was thus offered for the display of man's bellicose tendencies, and the roll of the Anthropological Society waxed large. I do not know whether our energetic and able treasurer, Mr. Gray, might be inclined to take a hint from this little bit of ancient history, but I imagine that he would prefer to build the numerical strength of our Institute upon more secure and enduring foundations.

The second stage in the career of the Anthropological Society was reached early in the year 1871. It then amalgamated with the Ethnological Society. I think that there is a general consensus of opinion that the credit of bringing about this most desirable union belongs to Professor Huxley. At that time he was the President of the Ethnological Society, and he met the representatives of the Anthropological Society armed with full powers to act as he saw fit. The title to be given to the future Society had previously proved a stumbling-block in the way of an agreement; but we are told by Sir Edward Brabrook, who was one of those who acted for the Anthropological Society, that Huxley's "first words settled the whole question." He said, "I am convinced that 'Anthropology' is the right word, and I propose that the amalgamated Society be called the Anthropological Institute."[1]

In this manner the Anthropological Institute of Great Britain and Ireland was launched, and for thirty-six years it has sailed under the name which was given it by Professor Huxley. The change of title which was effected last year, marks, as I say, another stage in its career, and will, I trust, add to its usefulness and popularity.[2]

During the year which has passed several celebrations, which possess a direct interest for our Institute, have been held. That which touches us most nearly was the celebration on the 2nd of October of the seventy-fifth birthday of Professor E. B. Tylor. This was an occasion on which the Institute could not stand aside, and it took advantage of the opportunity which was thus offered to testify to its profound admiration and respect for Professor Tylor by dedicating to him the current volume of the *Journal* and by asking him to accept the Huxley Memorial Medal.

Professor Tylor stands as the great leader and thinker in those branches of

[1] Sir Edward Brabrook, *Humanitarian*, No. 4, Oct. 1899, vol. xv, p. 230.

[2] It is a curious and interesting circumstance, that the year (1859) in which the Anthropological Society of Paris was founded coincides with the publication of the *Origin of Species*; that the year (1863) in which the Anthropological Society of London was founded coincides with the publication of *Man's place in Nature*; and that the year (1871) in which the union of the Anthropological and Ethnological Societies took place coincides with the publication of the *Descent of Man*. How profoundly the progress of Anthropology has been affected by these coincident events is apparent to all.

anthropology which he himself has so largely developed and of which he is generally regarded as the founder. It is unnecessary to dwell on the remarkable influence which he has exercised, not only by his work, but also by his attractive personality, on the progress of the Science to the extension of which the energies of this Institute are devoted; but I would like to allude to the long-standing connection which has existed between Professor Tylor and this Institute. This connection dates back to 1863—the year of the origin of the Anthropological Society. He was one of its founders; he has twice been the President of the Institute; he has been a frequent contributor to its publications; he has constantly shown it his good-will, and he has continually lent to it the weight and authority of his great name. We are deeply sensible of the influence which this long connection has given to us.

To the geologist we owe what information we possess regarding the antiquity of man, and also what we know regarding the periods at which early man attained his different stages of culture. The celebration, therefore, of the Centenary of the Geological Society in September last called forth the warmest sympathy on the part of the Institute. We were most worthily represented at the Festival by Professor Boyd Dawkins, who presented a congratulatory address on behalf of the Institute.

In the course of the year 1907 two other anniversaries occurred which likewise present an especial interest to the Institute. In 1707 Charles Linné, better known as Linnæus, and Comte de Buffon, the great French Naturalist and Anthropologist, were born.

The bi-centenary of the birth of Linnæus was celebrated in May with much formality and pomp by a double function, held first in Upsala and then in Stockholm. So far as I am aware, the bi-centenary of the birth of Buffon has been passed over more or less unnoticed.

The year of their birth and the remarkable influence which both exerted on the progress of Biological Science are the only points which these two great men possess in common. In other respects, both in life and in work, they present a marked contrast. Linnæus, the son of a poor clergyman, showed so little taste for the ordinary school subjects, that his father, in despair, came to the conclusion that he was only fit to be a shoemaker or a tailor. From this fate he was rescued by a medical friend who had detected in the backward scholar a strong predilection for scientific study. Buffon, on the other hand, the son of a landed proprietor in Burgundy, enjoyed every advantage in education that money could procure, and at the age of twenty-one came into possession of a handsome fortune. At the same age Linnæus (as he tells us in his diary[1]) was a student in the University of Upsala, living on a yearly pittance of £8, often in want of money to procure a meal, and obliged to patch his worn-out shoes with folded paper.

The contrast in the temperament and genius and also in the mode of work of Linnæus and Buffon was no less striking: Linnæus slow, plodding, fond of detail,

[1] *A General view of the Writings of Linnæus*, by Richard Pulteney, 1805, p. 517.

constantly striving after accuracy and precision in the smallest matters, and, probably as a consequence of this, a dull and uninteresting writer; Buffon, brilliant and dashing, impatient of detail and with a rooted distaste for the minutiæ of classification, and, above all, a most fascinating writer. It was fortunate for Buffon that he had as a colleague and associate the painstaking and accomplished anatomist, Daubenton, whose careful descriptions of the structure of animals constitute not the least valuable parts of Buffon's works.

The labours of Linnæus touch only very slightly the domain of anthropology. He gave man a place in his Natural System, and thus endeavoured to define his place in Nature. He placed him in the order Primates along with the apes, the lemurs and the bats. Since that time man has been buffeted about by the various naturalists who have endeavoured to classify him, but now it would almost seem that he has been provided with a permanent home in the original dwelling-place which was constructed for him by Linnæus; the bats, however, have been thrust out and denied so close an association with him. We should not give Linnæus too much credit for prescience in this matter. In fact, when we note the very imperfect knowledge which he possessed of the apes—both high and low—we cannot help concluding that the classification of man and the apes which he proposed was based on very slender evidence indeed. It need not cause surprise, therefore, that in his *Fauna Suecica* he admits that "up to the present he has been unable to discover any character by which man can be distinguished from the ape," and that in his *Systema Naturæ* he further remarks "that it is wonderful how little the most foolish ape differs from the wisest man."

Buffon, who has been termed the French Pliny, had a much deeper insight into the natural history of man, and a much more accurate acquaintance with the relations which exist between man and the apes. He had seen a young living chimpanzee, and along with Daubenton he had described a specimen of the Gibbon (*Hylobates Lar*[1]). He advocated the unity of the origin of man, and in his monumental work he describes the "Varieties of the Human Species," although he only deals with superficial characters, such as stature, colour, hair and features. By many, therefore, Buffon is regarded as the founder of Anthropology. To quote the words of Flourens, "Anthropology sprang from a great thought of Buffon. Up to his time man had never been studied except as an individual; Buffon was the first who, in man, studied the species." This is only partially true. We should not forget that Aristotle in his work on the "History of Animals," treats of man as a member of the animal kingdom, and discusses him from the physical, psychical and social aspects.

Anthropology in the eighteenth century offers a most interesting and instructive field for historical study. It is an oft-repeated truism that the knowledge of each succeeding period is built upon foundations which have been laid in previous ages. The thoughts of to-day are merely the thoughts of

[1] Huxley's *Man's Place in Nature*, 1863 Edition, p. 13.

yesterday purged of fallacies, and added to by later experience. To understand the position of any science at any particular time, it is therefore necessary in the first instance to take a glance backwards into the recesses of preceding ages.

Each of the two centuries which preceded the eighteenth century is marked by a notable advance which rendered possible and paved the way for the striking development of anthropology which took place in the eighteenth century. It is self-evident that no advance in physical anthropology could be made, no attempt to contrast the structure of the different races or the structure of man with that of the lower animals without, in the first place, laying a sure foundation of human anatomy.

For more than a thousand years prior to the sixteenth century, the only anatomy known and taught was the anatomy of Galen; but in 1543 the great work of Vesalius, entitled *The Structure of the Human Body*, was issued from the press, and a new era in the study of this subject opened. Vesalius is one of the most interesting figures in the sixteenth century. With Copernicus and Galileo he shares the glory of having wrenched asunder the fetters which circumscribed the thoughts of the earlier writers, and of having placed the pursuit of science in the more invigorating realm of original research.

Vesalius demonstrated in the clearest manner that the anatomy of Galen was not the anatomy of man, but in a large measure the anatomy of the ape; in short, he placed the study of the structure of man on the solid foundation of direct observation.[1]

If, from the anthropological point of view, the person who bulks most largely in the sixteenth century is Vesalius, in the seventeenth century, attention is chiefly fixed upon Tyson. Tyson contrasted the structure of man with that of the chimpanzee, one of the recently discovered man-like apes, and the treatise which he wrote on this theme is generally recognised as a model of comparative description. This treatise, which was published in 1699, under the authority of the Royal Society, bears the quaint title of "Orang-outang sive homo sylvestris or the anatomy of a Pygmie compared with that of a Monkey, an Ape and a Man." The conclusion arrived at may be stated in Tyson's own words. "Our Pygmie," he says, "is no man nor yet a common ape, but a sort of animal between both." Here then is a solid attempt to fix the place of man in Nature, and this all the more valuable seeing that the comparison which is instituted is with one of those

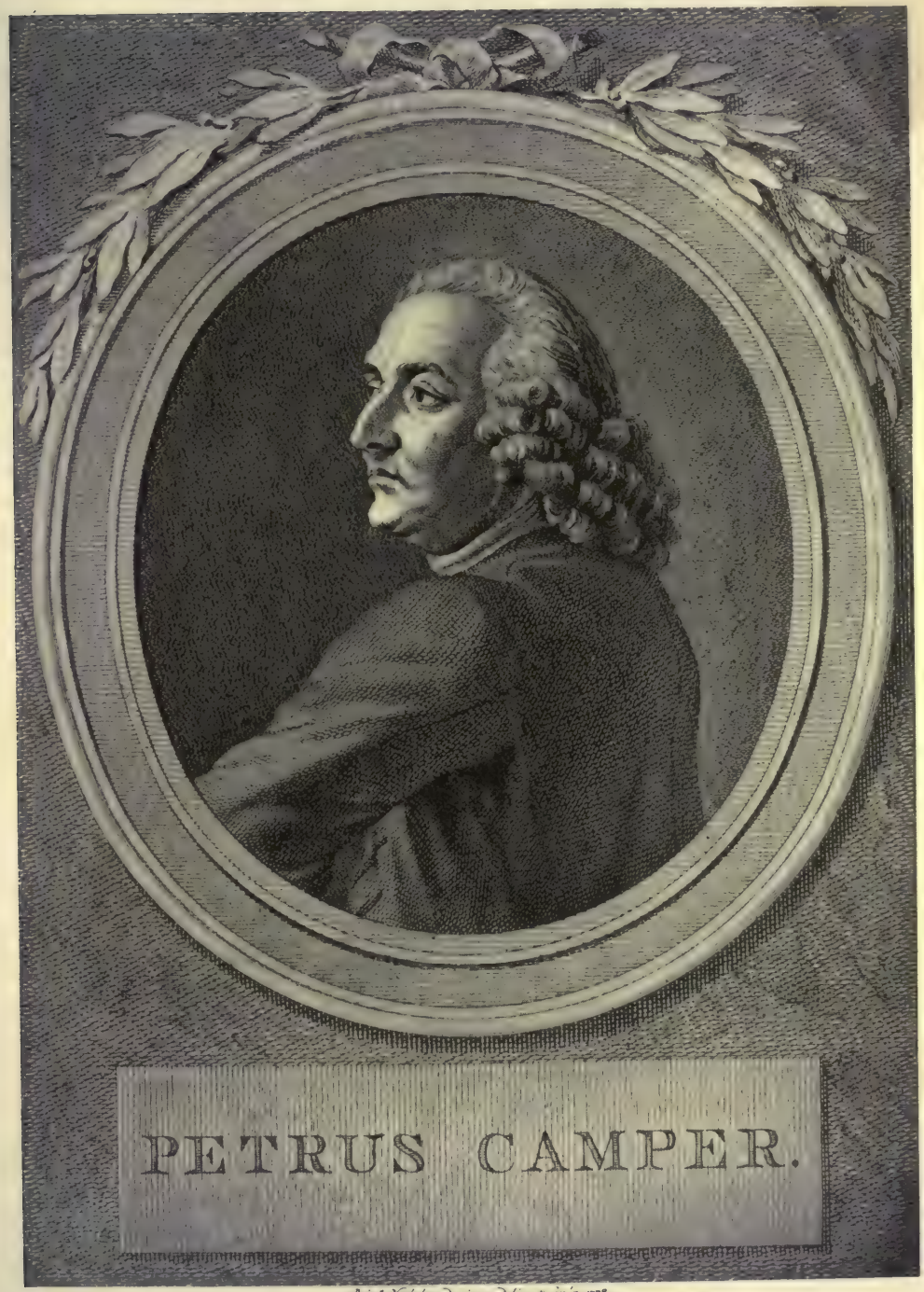
[1] It is interesting to note in passing that certain racial distinctions did not escape the eye of Vesalius. "It appears," he remarks, "that most nations have something peculiar in the shape of the head. The crania of the Genoese and, still more remarkable, those of the Greeks and the Turks are globular in form. This shape which they esteem elegant and well adapted to their practice of enveloping the head in the folds of their turbans, is often produced by the midwives at the solicitation of the mother." And he further observes, "that the Germans had generally a flattened occiput and broad head because the children are always laid on their backs in the cradles; and that the Belgians have a more oblong form because the children are allowed to sleep on their sides." These views on the influence of more or less continuous pressure on the pliable head of the infant have been revived in modern times.

animals which stand in nearest structural relationship to man. The skeleton of the Pygmie descended in the family of Tyson until the marriage of his granddaughter to Dr. Allardyce of Cheltenham. It was then handed over to the museum in Cheltenham, and afterwards transferred to the South Kensington Museum, where it may be seen at the present day.

The three centuries to which I have referred show an interesting gradational relation to each other in so far as the study of mankind is concerned. In the sixteenth century the true structure of man is made known ; in the seventeenth century, the structure of man is contrasted with that of an anthropoid ape ; in the eighteenth century, which opens with the birth of Linnæus and Buffon, we are introduced to the study of the comparative anatomy of the races of man. Camper, White and Soemmering contrast the structure of the negro with that of the European, whilst Blumenbach, Prichard and Lawrence compare the different races with each other and establish that branch of our science which is termed Ethnology.

It is not possible to separate the work of one century by a hard and fast line from that of another: there is always a considerable overlap, and thus with the exception of Camper, the other five anthropologists whom I have named carried on their work into the first part of the succeeding century. It is interesting to note that they present this point in common that they were all physicians, and the three English members of the group were only able to pursue their labours in the anthropological field as a pastime, and during the few leisure hours they could snatch from the practice of an arduous profession.

[Peter Camper, 1722–1789.] Peter Camper was born in Leyden in 1722 and died in the Hague in 1789. His father, a man of erudition and refined tastes, was on terms of intimate friendship with the celebrated physician Boerhaave. Young Camper thus enjoyed all the advantages which accrue when a keen and receptive intellect is brought into frequent and close contact with a veteran master-mind. His early inclinations were towards art and he received a careful training in drawing, painting and architecture. It was largely through these attainments that he was at a later period in his life enabled to leave his mark in the field of Anthropology. He graduated in Medicine in 1746 and two years later he spent a year in London with the view of extending his experience. The most interesting incident connected with this part of his career was his association with John Hunter the anatomist. Camper studied anatomy under this great master, and the influence of his teacher is very apparent in the indefatigable zeal which he afterwards showed in the pursuit of Comparative Anatomy. Fond of travelling he became the friend and associate of many of the leading men of the day—Buffon, Daubenton, Franklin, Haller, Blumenbach. Blumenbach was wont to say in his old age that he considered his correspondence with Camper one of the most fortunate incidents in his life.


PETRUS CAMPER.
Rein.s Vinkeles ad vivum delin.et sculp. 1778.

Camper was a man of the most brilliant talents, but it is a matter for regret that he spread his energies over so many varied fields of intellectual activity. His versatility was remarkable, and he held that next to the pleasure of discovering a truth was the pleasure of spreading it abroad. He was therefore a most prolific writer, a determined fighter and known both in London and Paris as a lecturer.[1]

Only four of the numerous writings of Camper may be claimed as having a direct bearing upon the development of Anthropology, viz., an essay upon the "Physical Education of the Child," published about the year 1761; a lecture delivered in 1764, in the Gröningen Anatomical Theatre upon "The Origin and Colour of the Negro"; an important work upon "The Orang-outang and some other species of Apes" published in 1778; and his lectures to the Academy of Drawing in Amsterdam in which he elaborated his views regarding his celebrated facial angle.

There is not much of present interest in his dissertation upon the "Physical Education of the Child,"[2] as he only treats of the first seven years of childhood. In these days of anthropometry and general attention to physical culture it is instructive to note that Camper, writing in the middle of the eighteenth century, states that his precepts, simple as they are, can only be applied to the children of the rich.

Camper had dissected three negroes, but his article on this subject[3] can hardly be said to be worthy of his high reputation. Embued with the principles of Buffon he contends that the colour of the negro is merely a matter of climate. Given a sufficient amount of time—several centuries he says—it would therefore be possible to turn a white race black or a black race white; and he goes on to make the quaint remark that such an experiment could only be carried out by great princes, and we would not live to see the result.

His treatise upon the Orang[4] is a great work and may be read with advantage at the present day. He performs for this member of the anthropoid group of apes the same task that Tyson accomplished for the chimpanzee. Man's place, therefore, in relation to the nearest of his congeners becomes still more clearly defined. In the introduction to this memoir Camper devotes some interesting paragraphs to the old sixteenth century discussion regarding the anatomy of Galen, and comes to the conclusion, in opposition to Eustachius, that Galen had never dissected the human body or at least that the structure of man had not served as the foundation upon which he had composed his works. Camper also elaborates the theory that Galen had taken his facts, in part at least, from the orang—a deduction which to most anthropologists will probably appear somewhat doubtful.

[1] Interesting details regarding Camper's life will be found in the first volume of *Oeuvres de Pierre Camper, etc.* (1803) in which three articles on this subject, written respectively by his son, by Vicq. D'Azyr, and by Condorcet, will be found.

[2] "De l'Education physique des Enfans," *Oeuvres de Pierre Camper*, 1803, vol. iii, p. 223.

[3] "De l'origine et de la couleur des Nègres," *Oeuvres, etc.*, vol. ii, p. 451.

[4] "De l'Orang-outang, et de quelques autres espèces de Singes," *Oeuvres, etc.*, vol. i, p. 5.

It is in this treatise that Camper announces that in the public dissection of a young negro in Amsterdam in 1758 he discovered the anomaly known as an eighth true rib,[1] and he discusses its import. This discussion is being carried on at the present day.

All through his career, in spite of his professorial duties in such varied subjects as Philosophy, Anatomy, Botany, Surgery and Medicine, in spite of his increasing investigations in Medicine, Pathology, and Comparative Anatomy, in spite of his cares and responsibilities as a statesman, Camper never lost his interest in art. In it he found his relaxation and his delight. At different times he lectured at the Academy of Fine Art in Amsterdam, and in one of these expositions, delivered in 1770, he enunciated the principles of the facial angle which from that time has borne his name. These lectures were not published until much later. In the closing years of his life he arranged them for the printer and prepared the illustrations, but political troubles in Holland interfered with his intention, and finally he died without having accomplished his task. The subsequent publication of the work was carried out by his son. I have not seen the Dutch edition, but I have studied both the French[2] and the English translations;[3] of these it appears to me that the former, now very rare, is the more reliable of the two.

In the introduction to this volume Camper tells us how his attention was directed to the varied facial characters presented by the different races of mankind. He says—"At the age of eighteen, my instructor, Charles Moor the younger, to whose attention and care I am indebted for any subsequent progress I may have made in this art, set me to paint one of the beautiful pieces of Van Tempel, in which there was the figure of a negro, that by no means pleased me. In his colour he was a negro, but his features were those of a European. As I could neither please myself nor gain any proper directions, I desisted from the undertaking. By

[1] So far as I know this is the first record of an eighth true rib in man, and it is interesting that it should have been observed in a negro. Somewhat later Soemmering also described the same condition in a negro and stated that in this race the eighth rib approaches more nearly to the sternum than in the European. Probably it is from these observations by Camper and Soemmering that the idea took root that this interesting reversion to a primitive type was more common in (if indeed it was not the monopoly of) the negro. Luschka protests against such a view (*Anatomie des Menschen*, vol. i, *Die Brust*, p. 119, 1863); but in *Nature* (1st Nov. 1888) there is a note to the effect that Dr. Lamb of Washington had observed ten cases of this anomaly—all in negroes, with the exception of one, which occurred in an American Indian. No mention is made of the number of negroes which he had examined in which the condition was not present.

At the present time no comparative statistics are available as to the relative frequency of the attachment of the eighth rib to the sternum in the negro and the European. All we do know is that the condition occurs with a considerable degree of frequency in both races.

[2] "Dissertation Physique de M. Pierre Camper, sur les différences réelles que présentent les traits du visage chez les hommes de différent pays et de différent âges, etc." Publiée après le décès de l'auteur par son fils Adrien Gilles Camper; traduite du Hollandois par D. B. Q. D'Isjonval. Autrecht 1791.

[3] "The works of the late Professor Camper on the connection between the Science of Anatomy and the Arts of Drawing, Painting, Statuary, etc."; translated from the Dutch by T. Coglan, M.D., London, 1794.

critically examining the prints taken from Guido Reni, C. Marat, Seb. Ricci, and P. P. Rubens, I observed that they in painting the countenances of the Eastern Magi had, like Van Tempel, painted black men, but they were not Negroes. The celebrated engraver, Cornelius Visscher, was the only one who appeared to me to have followed Nature and to have properly characterised Negroes."

In his endeavours to attain accuracy in the delineation of the facial characteristics of the different races Camper devised a craniometrical system. Prior to this Daubenton had made some observations regarding the position of the foramen magnum, but with this exception Camper, by the application of his system, may be said to have been the first to have occupied the craniometrical field from the standpoint of racial distinctions. Still it should be understood that his efforts were entirely directed towards the advance of art, and it is doubtful if he had any thought that he was at the same time assisting in founding an important branch of Ethnological Science.[1]

Only one of Camper's craniometrical methods—the well-known facial angle—has borne the strain of time, and to it alone need we refer. This angle he obtained by drawing a line from the aperture of the ear to the base of the nose (subnasal point) and another from the line of junction of the lips (or in case of the skull from the front of the incisor teeth) to the most prominent part of the forehead. Referring to the results obtained by the facial angle he remarks:—"If the projecting part of the forehead be made to exceed the 100th degree, the head becomes mis-shapen and assumes the appearance of hydrocephalus or watery head. It is very surprising that the artists of Ancient Greece should have chosen precisely the *maximum*, while the best Roman artists have limited themselves to the 95th degree, which is not so pleasing . . . . The two extremes of the facial angle in man are 70° to 100°—from the Negro to the Grecian antique; make it under 70° and you describe an Orang or an Ape; lessen it still more and you have the head of a dog."

Here, then, is Camper trying to express, by measurement, the varying proportions of the face and cranium in the different races; those differences which we express by the terms prognathism, mesognathism and orthognathism. How far can his facial angle be trusted to bring out the nicer shades of difference in the relation of face to cranium? Only, I am afraid, to a very limited extent. The points between which he draws his lines are all variable and are influenced in their position by other factors than those which depend on the degree of projection of the face. Thus an increase in the length of the face by depressing the point of intersection of the two lines reduces the angle, while an inflated glabella by pushing forward the frontal line increases the angle. The facial angle, therefore, is only calculated to give approximate results, and, indeed, in certain cases, it may even be distinctly misleading.

[1] Camper's craniological collection was not large enough to enable him to pursue such a line of work except to a very limited extent. Besides several Dutch skulls he only possessed nine crania representing eight races.

Even at the present day the problem as to how we can best discriminate with precision, the nicer shades of racial and individual difference in this respect cannot be said to be solved. Flower's gnathic index is very unsatisfactory. Thomson's method detailed in his recent splendid memoir entitled *The Ancient Races of the Thebaid*,[1] is probably the most reliable.

But anyone who studies the beautiful and artistic figures which illustrate Camper's work, will see that the two lines which, by their intersection, give the facial angle are, in many cases, very inaccurately drawn. Almost as often as not they do not pass through the points he has indicated. The angles which he gives cannot, therefore, be accepted as being in every case correct or capable of being compared with each other. Possibly the explanation of this lies in the fact that when the plates were being engraved Camper's mind was so engrossed by political worries that he was not able to exercise a proper supervision.

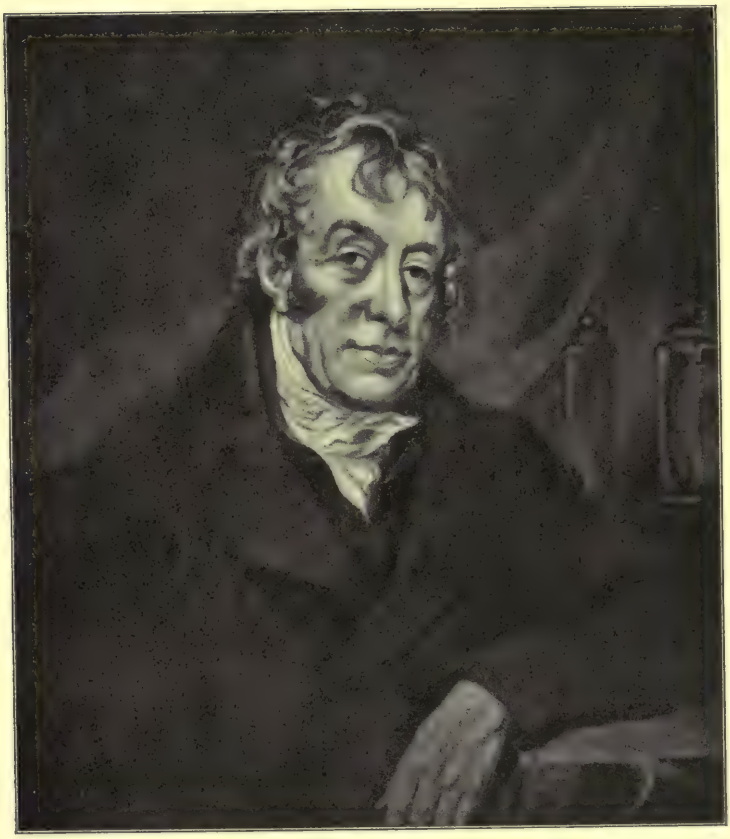
Camper's facial angle was severely criticised by Blumenbach, Lawrence and Prichard; not unfairly by the two first-named anthropologists, but somewhat too harshly by Prichard. Notwithstanding these strictures the angle found favour in France, where various modifications of it were devised; and also in America, where the celebrated Morton adopted it as one of the two measurements which he employed in framing the catalogue of his craniological collection.

Before we pass from Camper one additional point must be mentioned. In his unpublished commentaries on the bones, he calls attention to the different breadth presented by the crania of different races—the Kalmuck, the broadest, the Negro, the narrowest, and the European, intermediate in this respect between the other two. He, therefore, to some extent foreshadowed Blumenbach's classification of skulls, and showed an appreciation of the features upon which Anders Retzius, in 1846, founded his cephalic index.

[Charles White.—1728–1813.] In Charles White we have the pleasing picture of an old doctor seeking recreation in the study of anthropology and, in the declining years of his life, publishing the results of his observations and reflections in a quarto volume entitled "An Account of the Regular Gradation in Man, and in different Animals and Vegetables from the Former to the Latter" (1799). White was a Manchester man; he was born there, educated there, and there he attained the highest distinction as a physician. His writings on professional subjects exercised a most powerful influence, and in certain directions produced most beneficial changes in the practice of medicine.[2] It is proper that we should give him his acknowledged position as a learned progressive and ingenious physician and surgeon before we speak of his work in the field of anthropology.

[1] By Arthur Thomson, M.A., M.B., and Randall MacIver, M.A., Oxford Press, 1905.

[2] Dr. Charles J. Cullingworth has written a very charming account of Charles White from the professional point of view entitled *Charles White, F.R.S.,—a great provincial Surgeon and Obstetrician of the Eighteenth Century.* London, 1904.



I am yours most faithfully

E. White

In the domain of Natural Science, White drew his inspiration chiefly from John Hunter and Petrus Camper. He was the fellow student and life-long friend of the former; his written views show the influence which Camper exercised on his mind.

An additional interest is given to Charles White by his association in the latter part of his life with the brilliant and unfortunate De Quincey. De Quincey makes frequent reference to him in his autobiography, and speaks of the pleasure and profit he derived from this intimacy.[1] The side-lights which are thus let in on the character and personality of Charles White are very suggestive. In one place (p. 383) De Quincey says:—"Mr. White was in those days the most eminent surgeon by much in the north of England. He had by one whole generation run before craniologists and phrenologists, having already measured innumerable skulls amongst the omnigenous sea-faring population of Liverpool, illustrating the various races of man, and was in Society a most urbane and pleasant companion." White's craniological experience did not prevent him from making a somewhat curious professional blunder. He attended De Quincey's favourite sister and "pronounced her head to be the finest in its development of any that he had ever seen . . . . meantime," continues De Quincey, "as it would grieve me that any trait of what might seem vanity would creep into this record, I will admit that my sister died of hydrocephalus" (pp. 135 and 136—footnote).

We are also afforded a sketch of White in the capacity of a collector. "Mr. White," De Quincey tells us, "possessed a museum—formed chiefly by himself and originally, perhaps, directed simply to professional objects . . . . But surgeons and speculative physicians, beyond all other classes of intellectual men, cultivate the most enlarged and liberal curiosity: so that Mr. White's Museum furnished attractions to an unusually large variety of tastes." He then goes on to give an account of a visit to Mr. White's Museum, and after having stated that he had forgotten all the objects which lent a scientific interest to the collection he adds:—"Nothing survives except the *humanities* of the collection; and amongst these, two only I will molest the reader by noticing. One of these was a *mummy* and the other a *skeleton* . . . . but much it mortified us that only the skeleton was shown. Perhaps the mummy was too closely connected with the personal history of Mr. White for exhibition to strangers! It was of a lady who had been attended medically for some years by Mr. White, and who had owed much alleviation of her sufferings to his inventive skill. She had, therefore, felt herself called upon to memorialize her gratitude by a very large bequest, not less (I have heard) than £25,000; but with this condition attached to the gift—that she should be embalmed as perfectly as the resources in that art of London and Paris could accomplish, and that once a year Mr. White, accompanied by two witnesses of credit, should withdraw the veil from her face. The lady was placed in a common English clock-case, having the usual glass face; but a veil of white velvet obscured

[1] *The Collected Writings of Thomas De Quincey.* By David Masson, 1889; vol. i. *Autobiography from* 1785 *to* 1803, p. 384.

from all profane eyes the silent features behind. The clock I had myself seen, when a child, and had gazed upon it with inexpressible awe."

It must be admitted that White's observations regarding the obvious gradation in the animal and vegetable kingdoms contained nothing of much importance. Indeed even at the time he wrote his treatise the doctrine was by no means new. At the present day the title is apt to convey the impression that the author had some early glimmerings of the modern hypothesis of evolution; but anyone who reads the book will very soon have such anticipations disappointed. White held that species were fixed and immutable, and that they retained for all time the characters which distinguished them when they were severally created.

But not unfrequently a gem of rare value is found in a poor setting; and so it is in this work of the Manchester physician. Mr. White unearthed a great anthropological truth and used it in support of his gradation theory. He discovered that the forearm of the negro, relatively to the upper arm, is longer than the forearm of the European, and that a corresponding relationship exists between the ape and the negro. Here then is gradation, but it is a gradation of a totally different kind from that which occupied the mind of the observer. The whole of this important and far-reaching observation occupies barely three pages (pp. 52–54), and two tables (pp. 45 and 46) in White's quarto volume. At the same time we cannot accuse him of any want of diligence or care in verifying his results. He measured the arms of no less than fifty negroes. Most interesting and suggestive facts have accrued from the extension of Mr. White's observations. We now know that the different races may show very different conditions in this respect. Thus if we take the length of the upper arm as being 100, the forearm in the Chimpanzee is 94; in the Fuegian, 81·9; in the Negro, 77·7; and in the European, 73·4.

Mr. White's anthropometric work has likewise an important bearing on the ontogenetic as well as on the phylogenetic or ancestral history of man. Even as he presented them the figures relating to the Chimpanzee, Negro and European are striking and suggestive, but how much more so do they become when we reflect that in the individual development of the European, the upper limb goes through a similar evolution, and shows at different stages of growth relationships between the forearm and upper arm which correspond in turn to those seen in the ape and the negro before the limb finally attains the European type.[1]

Mr. White is sometimes spoken of as the founder of anthropometry, and in one sense, perhaps, the title is not altogether undeserved. He appears to have been the first to make, in a rational and scientific manner, measurements of the living person; but anthropometry is a general term and includes observations by measurements on the dead as well as on the living body, and from this point of view it must be acknowledged that Camper, Soemmering and Blumenbach had already entered the anthropometric field.

[1] Thus taking the length of the upper arm as being 100, the length of the forearm in the European fœtus of 2½ months is 90; of 6 months 77; and in the adult 73·4.



BLUMENBACH.

[Johann Friedrich Blumenbach, 1752–1840.] The Anthropological Society of London, when only two years old, published a volume entitled "The Anthropological Treatises of Johann Friedrich Blumenbach with memoirs of him by Marx and Flourens, and an account of his Anthropological Museum by Professor R. Wagner." It speaks well for the enterprise and discrimination of the youthful society that at this early period of its career it should have engaged in so useful and so important a work. In no way could it have better stimulated an interest in the subject which it was its object to promote.

Blumenbach's life-work was carried out at Göttingen, where he held a chair in the Faculty of Medicine, and as a direct result of this work, anthropology, for the first time, was placed on a rational basis. A profound student of Natural History in its widest and most philosophical sense, Blumenbach early directed his attention to the special study of man. While a student he became associated with a learned but whimsical old professor named Büttner, who had retired from active work, and who devoted his time to collecting, reading and reflecting.[1] Büttner made no attempt to arrange the objects which he had gathered around him; he was absolutely without method and his sole aim was the gratification of his own personal curiosity. Except by conversation (and he was a talkative old man) he made no effort to utilise his vast stores of knowledge for the good of others or the advance of science. Such characters are not unknown at the present day. Blumenbach was employed to reduce this chaos into order. This work and his association with the eccentric owner of the collection, deepened his interest in anthropology and afforded him the means of writing his famous thesis *On the Natural Variety of Mankind* for the degree of Doctor of Medicine. This was the first of many editions of the celebrated dissertation.

Blumenbach was a man of massive intellect, but it must be admitted that he had not the versatility or perceptive genius of Camper, nor yet the morphological intuition of his two English followers and contemporaries. He turned the whole force of his great powers to the study of man. He felt with Rousseau[2] that "the most useful and the least successfully cultivated of all human knowledge is that of man; and the inscription on the Temple of Delphi (Know Thyself!) contained a more important and difficult precept than all the books of the moralist."

Although each succeeding century had done something to dissipate the fabulous atmosphere which has at all ages clung so tenaciously around the Natural History of man, still the credulity of the period in which Blumenbach lived was very remarkable. From the time of the early classical writers, all sorts of stories of mythical varieties of mankind had been handed down—men with eyes situated in their shoulders, men with one leg, or with their feet turned backwards,

[1] See Blumenbach's own account which is quoted by Marx in his *Life of Blumenbach.* Publications of the Anthropological Society of London, 1865.

[2] *Discours sur l'Inégalité* (preface).

men with dogs' heads, or, indeed, with no heads at all. Even as late as the sixteenth century a naturalist of note seriously describes mermen who lived in the sea and who had their hinderparts covered with scales.

The eighteenth century also had, as indeed every century must have, its treasured mythical beliefs, although I would fain hope that these were of a somewhat taller order than those which disturb our judgment at the present day. Giants stalked the land in the imagination even of scientific men. Fossil bones of large animals such as the elephant were held to be human and to have belonged to a race which attained a stature of from 17 to 20 feet. In the fifth volume of the supplement of his classical work even Buffon lent his countenance to such a view and figured and described such bones as affording evidence of human giants. Blumenbach dealt the death-blow to such a hypothesis, although it is only right to add that the mistake had previously been pointed out by the anatomist Riolan. But even at the present time and in modern works on anthropology exaggerated views are expressed on this matter. We may take it as proved that there is no absolutely authentic record of the human stature ever having exceeded 8 feet or at most 8 feet 3 inches; and in these cases the inordinate growth is due to a morbid process which appears to be closely akin to the remarkable disease termed "acromegaly."

Another conception, and one which was not altogether discountenanced by Blumenbach, was the view which was believed by some to explain the thick swollen lips and flat nose of the negro. The negro mothers carry their infants on their backs, and "in the violent motions required in their hard labour, as in beating or pounding millet, the face of the child is said to be constantly thumping against the back of the mother."[1] By this rude treatment the face of the negro child was supposed to be moulded into shape; but no attempt was made to explain how the process of bumping produced exactly opposite results in the case of the nose and the lips—reducing the prominence of the former and increasing the projection of the latter.

Let us take another example of a curious belief entertained in the eighteenth century. Linnæus in his Natural System introduced within the species *Homo sapiens* a wild variety of man to whom he gave the name of *Homo sapiens ferus*, and supposed him to be the "original man of nature," whatever that might be. The belief in such a variety was very prevalent at this period. Many instances had been described, but the only case of which we have an authentic history is that of "Wild Peter," and this we owe to Blumenbach. The article which he wrote on the subject may be said to have disposed, for all time, of the belief in the existence of the so-called "Natural Man." Briefly put, the story of Wild Peter is as follows:—A naked brown boy was discovered in 1724 in the neighbourhood of a village in Hanover. He could not speak, and he showed savage and brutish habits and only a feeble degree of intelligence. He was sent

[1] Lawrence, *Lectures on Comparative Anatomy, etc.*, Ninth edition, p. 265. John Taylor, London, 1844.

to London and placed under the charge of Dr. Arbuthnot, the friend and associate of Pope and Swift. Here he became a noted personage, and the subject of keen discussion amongst philosophers and naturalists. One of his admirers, more enthusiastic than the others, declared that his discovery was more important than that of Uranus or the discovery of thirty thousand new stars. It was into this arena of debate that Blumenbach entered, and made known certain facts regarding the origin of Wild Peter, which he alone had taken the trouble to investigate, and which showed how absolutely futile all these philosophic theories and vapourings had been. He pointed out that when Peter was first met he wore fastened round his neck the torn fragment of a shirt, and further that the whiteness of his thighs, as compared with the brown colour of his legs, clearly indicated that at no distant date he had worn breeches but no stockings. But he also was able to piece together certain significant facts which proved that Peter was the dumb child of a widower, and that he had been thrust out of his home by a new stepmother.

In reading the accounts of these so-called wild children, and more especially the story of Wild Peter, in the light of our present knowledge, there can be little doubt that many of them were microcephalic idiots, and the interest of this lies in the fact that modern research renders it probable that certain of these unfortunate microcephales exhibit characters which distinguished an early stem-form of man. A grain of reason may therefore exist in the fancies of the early philosophers in regard to "Man in the wild state." A distinguished physician has classed microcephales under the title of "Theroid," and he and others have called attention to their brutish and ape-like characters, both mental and bodily.[1] Blumenbach makes the remark that in anthropology, as in any other branch of natural history, "scarcely any story, however absurd and foolish, has ever been told which does not contain some foundation of truth, but perverted by hyperbolical exaggeration or misinterpretation."

Blumenbach's range of knowledge was remarkable. He read everything which related to man, but chiefly histories and accounts of voyages and travels. In dealing with this chaotic mass of material he showed great judgment and power of discrimination in sifting out the true from the false and the useful from the useless. Out of the sifted matter grew the foundations of modern anthropology. One cannot read his writings without being amazed at the extent of his erudition, whilst the simplicity and modesty of his style make his writings most attractive to the reader. In these respects, if in no other, and I am afraid we cannot push the comparison further, we see some of those traits of mind which so largely distinguished Charles Darwin, the greatest philosopher of the succeeding century.

By the information which he gained by his reading and by direct observation, Blumenbach arrived at his classification of mankind into five varieties under the

[1] Laycock, *Journal of Mental Science*, 1863; Carl Vogt, *Ueber die Mikrocephalen oder Affen-Menschen; Arch. für Anthrop.*, Bd. 11, p. 129, 1867; Giacomini, *I cervelli dei Microcefali*, Torino, 1890; Cunningham and Telford Smith, "The Brain of the Microcephalic Idiot," *Trans. Roy. Dub. Soc.*, vol. v, 1895; and many other papers.

one species, viz., the Caucasian, the Mongolian, the Ethiopian, the American, and the Malay varieties. As we have noted, Linnæus and others had attempted at an earlier period to classify mankind, but none had approached the subject with the store of knowledge possessed by Blumenbach, and consequently his views on this matter received at the time universal acceptance. His classification was founded on a rational basis. Colour, hair, and bodily structure, so far as he knew it, and more especially the form of the skull, were the characters upon which Blumenbach placed reliance in discriminating between the different races of mankind. He regarded the Caucasian as being the primeval and highest race, and the others as having arisen from it by a process of degeneration. The Mongolians and Ethiopians, in his opinion, were the two extremes of two degenerative divergences in two opposite directions. The Americans he considered to stand intermediate between the Caucasian and the Mongol, and the Malays midway between the Caucasian and the Ethiopian.

In this manner the work which Buffon began was still further advanced, and the important branch of anthropology which we term ethnology took definite shape. But in referring to this great step in the progress of anthropology, it would be very wrong to omit to mention the work of the anatomist Soemmering. Blumenbach and he came together as fellow-students at the University of Jena. A warm and stimulating friendship was the result. Soemmering's contribution to the advance of ethnology consisted in his classical investigations into the comparative anatomy of the Negro and the European.

We have noted that Blumenbach, in his comparison of the different races of mankind, laid particular stress upon the form of the skull. Although by no means the first to study this part of the human skeleton from the ethnological point of view, he certainly was the first to do so in a rational way, and, therefore, he must always be regarded as the real founder of that branch of anthropology which we designate as craniology. He had gathered together a craniological collection, which, although insignificant as compared with the collections of the present day, was for that time unique, both as regards the number and the variety of the specimens it contained. The fame of the Göttingen collection was world-wide. It became the fashion to visit the Blumenbachian Museum, to have the differences which distinguish the different cranial types pointed out, and to indulge in sentimental rhapsodies upon the beauty and symmetry of the young female Georgian skull, which was considered to represent the highest type of all.

The impulse which Blumenbach gave to the study of craniology can be felt at the present day. Indeed, many think that an excess of zeal has been shown in this department of anthropological work, or, as Hagen has put it, that "craniology has become the spoiled child of anthropology." The present indications in this important study—a study with which the names of Broca, Flower, and Turner must ever be honourably associated—are, I think, more or less clear. Huxley pled for a morphological method of measurement, and there can be little doubt that what we want is a fuller knowledge of the precise morphological meaning and



Lemercier gravure

value of the results obtained by the various methods that are at present in force.

[James Cowles Prichard, 1786–1848.] Two of the most distinguished of our British anthropologists—James Cowles Prichard and Edward Burnett Tylor—have sprung from the ranks of the Society of Friends. It is a matter of common knowledge that one of the leading characteristics of this Society is the interest which it takes in the progress and well-being of mankind. It is, therefore, not difficult to conceive that the spirit engendered by early association with a Society which nourishes such sentiments would be particularly favourable to the cultivation of a wider scientific knowledge of mankind, and thus to the development of an interest in anthropological pursuits.

A leading authority has said that Prichard should be regarded as being perhaps the greatest anthropologist of his period, and when we remember that the period referred to included Blumenbach, we must recognise that this is high praise. I am not inclined to quarrel with this estimate of Prichard's work; indeed, I am more disposed to reiterate the statement in a more unqualified manner. At the same time, it must be admitted that there is some difficulty in estimating the relative merits of Prichard and Blumenbach—the methods and work of the two men were so essentially different. Still, it has always appeared to me that Prichard has never received his full measure of appreciation either at home or abroad. He was overshadowed during his life-time by Blumenbach. Blumenbach lived in a great centre of intellectual activity where he was brought into constant contact with the leaders of all departments of scientific thought. Endowed with a striking personality, and working at a new subject by new methods, his fame was noised abroad and he became the predominant figure in the anthropological world. Prichard, on the other hand, led the quiet and studious life of a provincial physician in Bristol, remote from those influences which go to build up a reputation. His works alone spoke for him; and now that we have come to a generation which knows these two great leaders only by their writings, we are able to take a dispassionate view of the matter. Blumenbach was essentially a physical anthropologist, and in this department I think we may say he was unexcelled. Prichard had a much broader grasp of the subject. An accomplished anatomist, he was, at the same time, one of the most learned philologists of his day and also a noted psychologist, and he brought his extensive knowledge in each of these branches to bear upon his ethnological work.

It is a matter not without interest that both Blumenbach and Prichard entered the anthropological arena by a similar portal. We have seen that the leading work of the former was in the first instance prepared as a dissertation for the degree of Doctor of Medicine in the University of Göttingen. In like manner Prichard presented, in 1808, his Thesis entitled *De Humani Generis Varietate* for the degree of Doctor of Medicine in the University of Edinburgh. It affords me pleasure to be able to show the members of the Royal Anthropological Institute

the official copy of this thesis which I have brought with me from the University Library for the purpose.

This thesis constituted the starting-point of Prichard's anthropological work. Five years later, much expanded, it was published under the title of *Researches into the Physical History of Mankind*—a book which, after several editions, finally appeared shortly before the death of the author as a great work of five volumes. Speaking of Prichard at the meeting of the British Association in Bristol in 1875, Professor Rolleston remarked: "And by the employment of the philosophy of continuity and the doctrine of evolution with which the world was not made acquainted till more than ten years after Prichard's death, many a weaker man than he has been enabled to bind, into more readily manageable burdens, the vast collections of facts with which he had to deal. Still his works remain, massive, impressive, enduring—much as the headlands along our Southern Coast stand out in the distance in their own grand outlines, whilst a close and minute inspection is necessary for the discernment of the forts and fosses added to them, indeed, dug out of their substance, in recent times."[1]

Although Prichard discussed all matters relating to his subject in a scientific and impartial manner, the conclusions he arrived at were always orthodox and were expressed in such a way as to propitiate and not to offend constituted authority. In this, there cannot be a doubt, he was perfectly sincere. It is said that his father, when he observed the direction the investigations of his son were taking, enjoined him to write nothing which would tend to undermine the literal interpretation which was at that time given of the Scriptural account of the origin of man. How far this may have influenced him, it is impossible to say, but those who knew him best were assured that his inclinations entirely coincided with the injunction he had received from his father.

Like Buffon, Camper and Blumenbach, Prichard maintained that the different races of man should be included under one species, and that they had attained their wide-spread distribution over the world by dispersion. He held advanced ideas in regard to the transmission of occasional variations, and thought that to some extent this might account for the diversity which characterises the different races. His views on the question of skin colour were ingenious and interesting. Buffon and Blumenbach held that the original colour was white and that the different shades seen in the different races were later acquisitions. Prichard was of the opinion that the original pair from whom all mankind has sprung were black. He was impressed by the observation of John Hunter that cultivation tends to modify the intensity of colour in plants and animals, and he came to the conclusion that civilization had operated upon mankind so as to reduce the pigment in the skin and produce the white varieties. Such a conception has now only a historical interest. It is impossible to come to any satisfactory conclusion as to the skin-colour of the early stem-form of man. I believe that there are

[1] *Scientific papers and Addresses by George Rolleston.* Edited by Sir William Turner, 1884, vol. ii, p. 902.

some who incline to Prichard's view, but there is absolutely no evidence of any kind in support of such a supposition. The conditions present amongst the anthropoid apes do not help us: indeed, they render the problem more difficult because in them also we see a variety of skin-colours. The gorilla has a black satiny skin like that of the Negro; the chimpanzee (*Troglodytes niger*) has a skin which may be very nearly white, but which varies considerably in different specimens, and is usually reddish brown on the face and hands[1]; the orang has a coppery tinted skin; and amongst the various species of Gibbon we meet with different shades.

Prichard writes an excellent chapter on craniology; indeed it is extraordinary how a physician spending the most of his day in the pursuit of an engrossing profession could find time to pursue his favourite study from so many points of view. Blumenbach had classified skulls by the outline which they present when viewed from above, or, in other words, by the appearance of the Norma Verticalis. Prichard contends that, however useful such an inspection may be, neither it, nor the facial angle of Camper nor any other single character can be accepted as a satisfactory basis of classification. "In order," he remarks, "to form a correct idea of the varieties in the shape of the head which are peculiar to individuals and races, it is necessary to examine every part and to compare all the different aspects which the skull presents." The truth of this observation is fully realized at the present day.

We need not enter into Prichard's method of craniological classification. It contains little of importance to modern workers; but I would like to quote a passage from his description of the narrow elongated type of skull, which shows how clearly he appreciated one of the influences which tend to modify the shape of the cranium. He says: "In these skulls the principal characters are referable to the idea of lateral compression; the temporal muscles having a great extent, rising very high on the parietal bones and being very large and powerful, subject the head to a force producing the effects of lateral compression and elongation." Only one point is wanting in this description: he does not correlate the degree of compression with the size and weight of the lower jaw.

[1] Professor A. F. Dixon, of Trinity College, Dublin, writes me that "the chimpanzees which have lately been in the Zoo varied much in complexion. The female we have at present is reddish brown, the skin of the face being distinctly redder than that of the hands and feet. The male—older than the female—is a duller, lighter, colourless red, with dark irregular patches."

The following story, taken from William Smith's *A New Voyage to Guinea* (1744) and quoted in Huxley's *Man's Place in Nature*, indicates the ideas of the natives in regard to the complexion of the chimpanzee. William Smith, speaking of a living specimen, says:—"I gave it in charge to one of the slaves, who knew how to feed and nurse it, being a tender sort of animal; but whenever I went off the deck the sailors began to tease it—some loved to see its tears and hear it cry; others hated its snotty nose; one who hurt it, being checked by the negro who took care of it, told the slave he was very fond of his country-woman, and asked him if he should not like her for a wife; to which the slave replied, 'No, this no my wife; this a white woman—this fit wife for you.'"

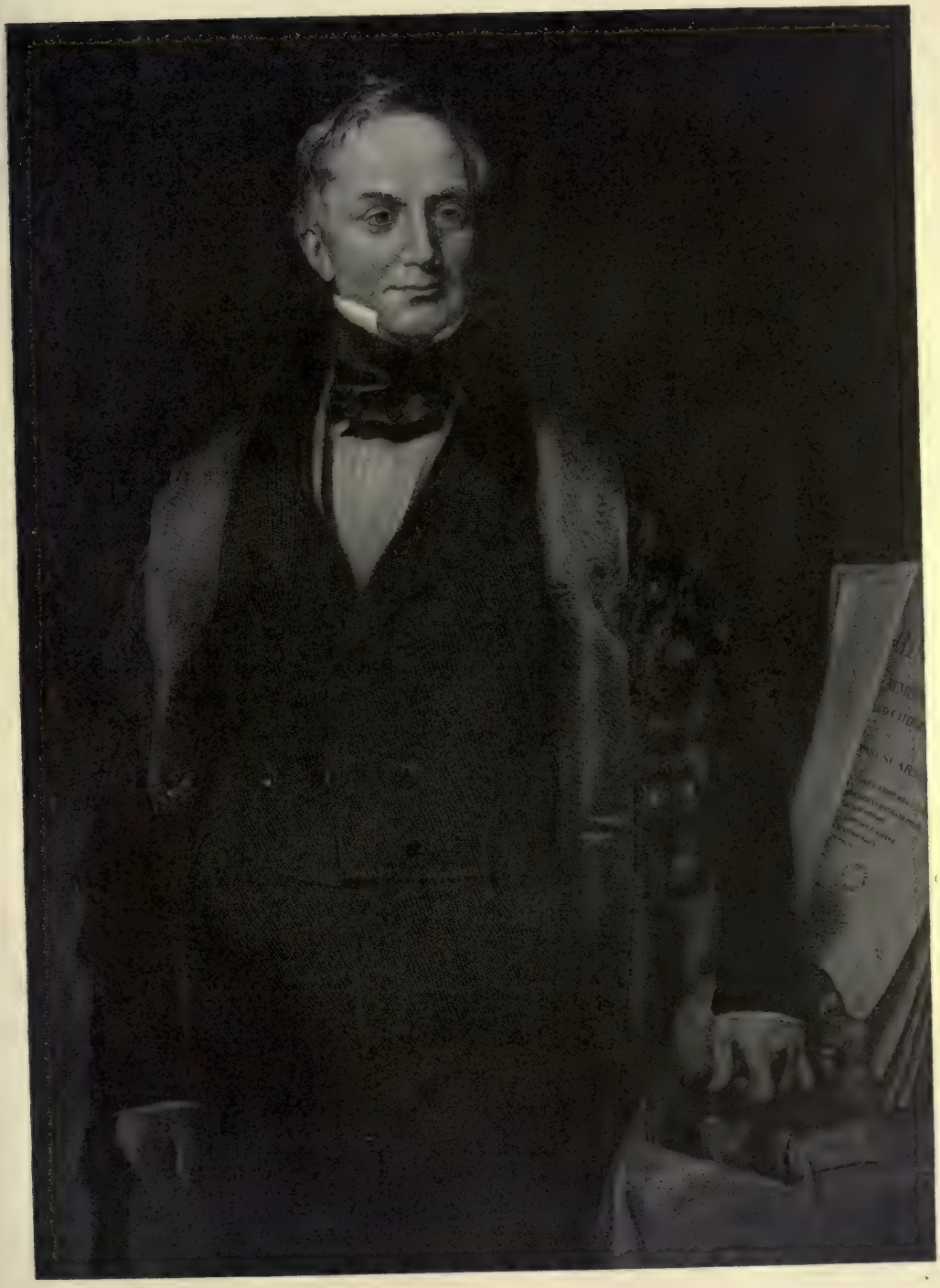
[Sir William Lawrence, 1783–1867.] Topinard tells us that when he began the study of anthropology, Broca advised him to read the lectures of Sir William Lawrence.[1] Although a hundred years all but ten have passed since these lectures were delivered, I am in the habit of giving the same advice to my Anthropological Class in the University of Edinburgh; and these are the same lectures which, at the time, raised such a fierce storm of theological protest that the author had to publicly announce that he had suppressed the volumes. The incident is full of interest, and throws a clear light upon the difficulties which the early anthropologists had to encounter. Sixty-seven years earlier Buffon had to bow before a similar storm.

Lawrence was a surgeon of great eminence in St. Bartholomew's Hospital in London.[2] At the early age of 32 he was appointed Professor of Anatomy and Surgery to the Royal College of Surgeons, and in the three subsequent years (1816, 1817, and 1818) he delivered his famous *Lectures on Comparative Anatomy, Physiology, Zoology, and the Natural History of Man.* These lectures were immediately denounced, and Lawrence (to use his own words) was charged "with the unworthy design of propagating opinions detrimental to society, and of endeavouring to enforce them for the purpose of loosening those restraints, in which the welfare of mankind depends." Mr. Abernethy, with whom Lawrence had been apprenticed, and under whom he had acted for many years as demonstrator of anatomy, took a prominent part in the attack. In the introduction to the lectures delivered in 1817, Lawrence defended himself with great dignity, eloquence, and vigour, and pled for freedom of enquiry and freedom of speech. "These privileges," he insisted, "shall never be surrendered by me. I will not be set down nor cried down by any person, in any place, or under any pretext. However flattering it may be to my vanity to wear this gown, if it involves any sacrifice of independence the smallest dereliction of the right to examine freely the subjects on which I address you, and to express fearlessly the result of my investigations, I would strip it off instantly."

It may seem curious that in the face of this protest, and considering his strong personality and the inflexible character which he exhibited in later years, Lawrence should have consented to suppress the obnoxious volumes. It is said to have been the only occasion in the course of an unusually long life, and a life by no means free from strife, on which he gave way before opposition. One of his biographers (the accomplished writer in the *Dictionary of National Biography*) believes that it was due to the small value that he put upon his conclusions. I can hardly imagine that this is the correct explanation. He was a comparatively young man. Surgery and not anthropology was his aim in life, and he must have seen that if he continued to brave public opinion, his professional career would be seriously endangered. And what was all this controversy about? On matters so small that it is needless

[1] *Éléments d'Anthropologie Générale*—par le Dr. Paul Topinard, 1885, p. 84.

[2] In the later years of his life he had among his pupils Sir William Turner and Sir George Humphry.



SIR WILLIAM LAWRENCE.

to waste time in going into them. Indeed, the conclusions which so greatly disturbed the public mind might be given forth to-day from any platform without producing the slightest flutter in the most sensitive breast. And yet Lord Chancellor Eldon refused to sustain an injunction to restrain a publisher from selling a pirated edition of the work, and gave judgment in the following words: "Looking at the general tenour of the work and at many particular parts of it, recollecting that the immortality of the soul is one of the doctrines of the Scriptures, and considering that the law does not give protection to those who contradict the Scriptures, and entertaining a doubt, I think a rational doubt, whether this book does not violate this law, I cannot continue the injunction."[1]

For a time the book was in great demand, and nine editions were published without the consent of the author. No doubt, the notoriety which the work had attained to some extent led to the large sale, but, apart from this, the lectures possess a high scientific value. This is especially the case with the chapters which deal with the natural history of man. These represent twelve lectures which were delivered in 1818, and in which the physical characters of man are described with a great breadth of view. The arrangement and mode of treatment of the several branches of the subject might be followed with advantage at the present time, and the substance is distinctly in advance of the anthropological literature of the day. The facts, no doubt, are largely borrowed from Blumenbach, but Lawrence handles these facts in a more illuminating way, and shows a deeper insight into their morphological significance. Indeed, in one or two places he almost shakes himself free from the obstructive doctrine of the immutability of species. Speaking of "original" man, he asks the question, "Did he go erect or on all fours?"

Amongst certain of the younger generation there seems to be a belief that the doctrine that characters acquired during the lifetime of the parent are not transmissible to the offspring is one of comparatively recent growth. Three years ago I even heard this doctrine spoken of as "Weismannism" in a debate which took place in Section H of the British Association. It is true that Weismann restated the doctrine with a logical clearness and force which at once caught the public mind; but many years before—in fact, nearly a century before—the general principle had been recognised and applied to the study of man. The discussions which took place in the eighteenth and early part of the nineteenth century, as to the single or multiple origin of mankind, were bound to direct attention to the causes at work in producing the striking physical differences which distinguish the different human races, and more particularly to the effect which environment exercises in this direction. If all mankind have descended from one original pair and have become dispersed from one centre, how do we find some black and others white; some woolly haired, and others straight haired; some with protuberant jaws, and others with a face which lies almost entirely under shelter of the fore-

[1] *Reports of cases argued and determined in the High Court of Chancery during the time of Lord Chancellor Eldon.* Edward Jacob, 1821, 1822, 2 and 3 George IV. 1828, p. 471, March 21, 1822, Lawrence & Smith.

head? These were questions which were hotly debated, and the influence which environment exerted in modifying the bodily characters of an individual, and the possibility of these being transmitted to the offspring, did not escape the notice of the anthropologist of that period.

The great Buffon may be cited as one who held very decided views on this matter. To him climate and diet offered a sufficient explanation of the variations exhibited by the several races of mankind. Primitive man was white, and racial distinctions had arisen simply by the different surroundings and conditions into which his descendants had been introduced. Clearly, then, Buffon was a believer in the view that acquired characters were capable of being transmitted. This is what he says on the subject: "Upon the whole, every circumstance concurs in proving that mankind are not composed of species essentially different from each other; that, on the contrary, there was originally but one species, who, after multiplying and spreading over the whole surface of the earth, have undergone various changes by the influence of climate, food, mode of living, epidemic diseases, and the admixture of dissimilar individuals; that at first these changes were not so conspicuous, and produced only individual varieties; that these varieties became afterwards specific because they were rendered more general, more strongly marked, and more permanent, and by the continual action of the same causes; that they are transmitted from generation to generation, as deformities or diseases pass from parents to children." This is indeed pure and simple Lamarckism before the days of Lamarck. As we have already noted, Camper held views on this question very similar to those of Buffon.

It is somewhat difficult to arrive at a clear perception as to what Blumenbach thought on this important matter. Profoundly impressed by the belief that all mankind had a common origin, he discusses at considerable length, but apparently not entirely to his own satisfaction, the causes which he considers have produced the differences which separate the various races. In the first edition of his dissertation *On the Natural Variety of Mankind*, he advocates a view which in all essential points does not materially differ from that of Buffon. In the third edition we find that he modifies this opinion. He now introduces a vague intermediate principle which he terms "the formative force," and he states that it is this, worked upon by the surroundings and external conditions, which has produced the black skin, the woolly hair, and the protuberant face of the negro, and which has modified other races in other ways. His attitude of mind towards the doctrine of the transmission of acquired characters is also difficult to determine with any degree of precision. Speaking of the supposed inheritance of mutilations, he refuses to commit himself one way or the other, but at the same time he remarks "I am persuaded myself that climate is the principal cause of the racial face." It is evident that in the consideration of these important questions Blumenbach, even in his later writings, had not got much beyond the stage of Buffon. He apparently saw the weak points of Buffon's position, but his efforts to strengthen them did not carry him very much further.

It has been claimed for Blumenbach by certain modern writers that he nearly anticipated certain of those principles which were enunciated by Darwin, and which have during the last half-century revolutionised the entire range of biological science. My study of Blumenbach's writings has not conveyed to me any such impression.

The discussion of the causes which have produced the varieties of the human species is taken to an altogether higher platform by our two English anthropologists—Prichard and Lawrence—both of whom were contemporary with Blumenbach. The doctrine of the non-transmissibility of acquired characters is stated by both of these writers in the clearest and most precise manner. "Nothing," says Dr. Prichard, "seems to hold more generally, than that all acquired conditions of the body, whether produced by art or accident, end with the life of the individual in whom they are produced. . . . But for this salutary law, what a frightful spectacle would every race of animals exhibit! The mischances of all preceding times would overwhelm us with their united weight, and the catalogue would be continually increasing, until the universe, instead of displaying a spectacle of beauty and pleasure, would be filled with maimed, imperfect and monstrous shapes."

But Lawrence is still more explicit in his recognition of this fundamental principle. He contends that "in all the changes which are produced in the bodies of animals by the action of external causes, the effect terminates in the individual; the offspring is not in the slightest degree modified by them, but is born with the original properties and constitution of the parents and a susceptibility only to the same changes when exposed to the same causes" (p. 347). He fully appreciates what of late years has occupied so prominent a place in the minds of those who have taken a part in the discussion on the alleged physical deterioration of the people, viz., that climate, locality, food and mode of life exercise a most potent influence in altering and determining the physical characters of man; but he maintains most strenuously that these effects are confined to the individual, that they are not transmitted to the offspring, and have, therefore, absolutely no influence in modifying the race.

Having thus dismissed environment or external influences as being outside the range of the conditions which produce racial changes, and as being entirely inadequate to account for those signal diversities which constitute racial differences, Lawrence is faced with the necessity of approaching the problem from another point of view. In a brief sentence he lays down what is nothing else than the modern doctrine of evolution. "Racial differences," he remarks, "can be explained only by two principles already mentioned, namely, the occasional production of an offspring with different characters from those of the parents, as a native or congenital varitey; and the propagation of such varieties by generation." He considers that domestication is favourable to the production of these congenital and transmissible variations, and he deplores

the fact that whilst so much care and attention is paid to the breeding of our domestic animals, the breeding of man is left to the vagaries of his own individual fancy. But I need not pursue this subject further. I have said enough to make it evident that Lawrence taught an anthropology which was much in advance of his time, and that in much that he wrote he to some extent anticipated the modern doctrine of evolution; and yet Lawrence ceased from all anthropological work at the early age of thirty-five. The odium which he had incurred by the delivery and publication of his celebrated lectures drove him from the field, and he never entered it again. Henceforth, he devoted himself solely to professional pursuits. This was a sad loss to anthropology. If in his youth he was capable of producing a work so suggestive and so advanced, it is impossible to avoid the belief that by riper experience and more mature reflection he would, had he continued his researches, have greatly contributed to the progress of the subject. He lived to see the publication of *The Origin of Species*; Huxley's *Man's place in Nature*; and some part of Broca's early work. It is difficult to conceive that he had lost all interest in his early exploits in the same domain, and we can imagine the pleasure which these epoch-making works afforded him.

And now I have completed the task which I had in my mind when I began this address. If the eighteenth century was the period in which ethnology took form, it was in the nineteenth century that anthropology in the true and full sense of the word became established. The time had come when the foundations upon which the science of man rested were to be greatly widened. It was recognised that the narrow outlook which had hitherto been deemed sufficient would no longer serve to give the expansive survey of the manifold aspects of our subject which is necessary for its comprehensive study.

There can be no question that the crowning event of this epoch and the one which enlarged the prospect of the anthropologist more than any other was the publication of Darwin's *Origin of Species*. The study of anthropology was at once placed upon an altogether different, upon an infinitely higher platform. The controversy which had raged so long and which had divided anthropologists into two bitterly opposed camps—the controversy as to the single or multiple origin of man—became futile and childish. A new era in the history of anthropology opened—the era in which we work—and who could have foreseen its fruitfulness? Who could have imagined the many enchanting vistas which are now revealed to the anthropologist—vistas which lure him on into the most varied fields of delightful work?

NOTE.

The portrait of Petrus Camper has been taken from the French translation of his Dissertation upon the different features presented by men of different races and different ages (for reference see p. 9, footnote 2). The engraving is from a drawing by Reinr. Vinkeles, dated 1778.

I am indebted to Dr. Charles J. Cullingworth for the portrait of Charles White. He not only most generously gave me permission to introduce this illustration but also supplied me with the proof copy from which the block has been prepared.

I regret that I do not know the history of the old engraving of Blumenbach. It was picked up in a print-shop in Germany.

The portrait of Prichard I owe to the kindness of his grandson, A. W. Prichard, Esq., M.R.C.S., Bristol, who has also been so good as to accord me permission to use it for the purpose of illustrating this address.

Dr. Norman Moore furnished me with the photograph from which the portrait of Sir William Lawrence has been taken. It is from an engraving from a painting by Pickersgill. I am deeply indebted to Dr. Norman Moore, not only for the trouble he took in obtaining a satisfactory photograph, but also for allowing me to use it in this address.

SKULLS FROM NEW CALEDONIA.

By David Waterston, M.A., M.D.

[With Plates VI–VII.]

The collection of skulls which forms the subject of this communication is contained in the Anatomical Museum of Edinburgh University. I am indebted to the kindness of the Conservator, Professor D. J. Cunningham, for the opportunity of examining and measuring them, and to him I wish to express my warm thanks for this permission, and also for the kind assistance he has given me during the course of my investigations.

The series of skulls was presented to the museum by Dr. Ramsay Smith, who obtained all the specimens in the island of New Caledonia, a locality which is not well represented in craniological collections in this country. Dr. Barnard Davies[1] gives the measurements of six specimens, in his *Thesaurus Craniorum*, and thirteen specimens[2] are contained in the Museum of the Royal College of Surgeons. The skulls were all labelled as "Kanaka" by Dr. Ramsay Smith. This term, however, has no true racial significance. Barnard Davies states that it is the name applied by foreigners to the natives of the Polynesian Islands generally. "In the native language of the Sandwich Isles, Kanāka means a man, and Kanakā men generally. Kanaka is at times applied to Marquesan Islanders, and even to New Caledonians, a race that there cannot be any pretence to confound with Polynesians, even using this term in a very indiscriminate and comprehensive manner."

Now-a-days, this term is merely a general name for the coloured labourers who are imported in large numbers from many of the islands of the Pacific to work in the sugar plantations in Western Australia, and among these labourers are found representatives of many different races. The value of a small collection of such crania would not therefore be great.

We have, however, been able to ascertain that the skulls were all obtained in the island of New Caledonia, which is the principal French possession in the Pacific, and which is used as a convict settlement, and presumably were the crania of inhabitants of that island.

The inhabitants of the Pacific islands in this region, so far as is already known, belong mainly to two great divisions, the Melanesians or Papuans, and the Polynesians or Mahoris, possessing characteristics in colour, in hair and in shape of head by which they can be clearly distinguished one from another.

[1] *Thesaurus Craniorum*, p. 308.
Catalogue of Osteological Specimens, part 1.

Papuan crania, however, exhibit considerable variety in form and in proportion, and, in addition, the practice of artificially flattening the back of the head prevails to a considerable extent among individuals and, it may be, also among tribes of the natives of New Guinea, who are Papuans, and the same custom is found in other localities. The island of New Caledonia lies to the south of the Solomon Islands, about 800 miles to the east of the coast of Australia, and the people are said to be strongly Papuan in feature, *i.e.*, the skin is sooty-brown or black in colour, the hair is black and frizzly, and the beard is well developed.

The inhabitants are rapidly diminishing in number from disease and from warfare.

From the specimens which he examined, Barnard Davies found that the crania from this island exhibited on an average an extraordinary degree of length, height, and narrowness, from which he applied the name of hypsi-stenocephali to the crania of this series.

The skulls which I have examined were obtained from different parts of the island, some from Noumea, which is the capital, and one from Bouloupari, and all with two exceptions, were the crania of adults, the two exceptions being, one, the skull of a youth of about sixteen, and the other that of a young girl, which had been presented to Sir Wm. Turner, and was labelled "Tribe de Kanala."

I. CRANIOSCOPIC EXAMINATION.

The following is an account of the general characters exhibited by the individual crania.

The catalogue numbers of the crania are "Group 28, sub-group L," and the numbers in this sub-group are 1 to 8.

No. 1.—This was the cranium of an adult male, in which the left parietal bone presented two openings, in the region of the parietal eminence. These were probably the result of an injury, which had been inflicted some time before death, and were situated in a somewhat circular depressed area, which measured 16 cms. in its maximum diameter.

The hinder of the apertures was roughly circular, and was 10 mm. in diameter, while the anterior was rather irregular in shape, and measured 30 mm. by 15 mm. in its widest part. The edges of each were bevelled and smoothed off, indicating that the holes had been present some time before death.

The coronal suture was partially obliterated at the sides below the level of the temporal ridges, but otherwise the sutures showed no unusual arrangement.

The cranium was long and narrow, exhibiting a high cranial vault. The curvature of the vault was rather low in the frontal region, and the highest point lay between the parietal eminences.

The skull was rather ill-filled and was very narrow in the frontal region. The right parietal eminence was very prominent, but the interparietal suture was depressed and sunken in its hinder part. The occipital region was narrow, and

projected backwards as a rounded elevation above the level of the superior curved line.

The glabella was large and prominent.

There were no teeth in the upper jaw, but the sockets were normal, and five teeth which remained in the lower jaw were of average size and were normal.

The nasal bones were highly curved, and arched forwards in their lower part, and the zygomata were wide and prominent.

The nasal spine was short and blunt, and the lower margin of the anterior nasal orifice was rather rounded. The lateral margin on each side passed downwards at its lower end on to the facial aspect of the maxilla, and blended with the elevation of the socket of the central incisor tooth. There was a small "prenasal fossa" on either side, lying between this continuation of the lateral margin and a "paraseptal line" which ran outwards on the floor of the nose, from the root of the anterior nasal spine to the lateral wall.

No. 2.—This was the skull of a young individual, probably male.

From the dentition, the age appeared to be about 16 years. The characters of the sutures corresponded, and otherwise the cranium showed no unusual features.

The most important feature of this skull was the character of the anterior nasal orifice, which was very striking, being remarkably wide and short, while its lower margin was indistinct, so that the floor of the nasal fossae was continuous directly with the facial aspect of the maxilla, without any intervening ridge.

The vault of the skull was smooth and rounded, but the specimen was too immature to show any distinct ethnic characters, beyond that already referred to.

No. 3.—This was the skull of an adult female.

The vault of the skull was high and narrow, and the slope of the frontal bone was moderately vertical, the highest part of the vault lying between the parietal eminences, which were moderately well developed. The occipital region was narrow, and resembled that of the first skull. The molar teeth which were present were large and massive.

The right central incisor had been absent for some time, and the socket had been absorbed, and the condition suggested that it had been removed at an early date, as is done at puberty by the natives of Australia.

The anterior nasal orifice was again of a low type, having no distinct lower margin, and the lateral borders passed downwards on to the facial aspect of the maxilla. On the left side it passed to the socket of the lateral incisor tooth, but was very indistinct, while on the right side it was obscured by some alteration in the texture of the bone at the lower margin of the nose.

The nasal spine was not present, nor was there any paraseptal line on the floor of the nose, so that there was no distinct prenasal fossa.

No. 4.—This was also the skull of an adult male.

The sutures showed the remains of the metopic suture above the nasion, and an epipteric bone was present on the right side. The left nasal bone was larger

than the right. The latter failed to reach the fronto-nasal suture, and the internasal suture was, therefore, deflected to the right at the upper end.

The cranium in this specimen was narrow also, and the vault of moderate height, the highest point being between the bregma and the parietal eminences. The occipital region showed a formation similar to that in the first specimen, and there was a slight degree of flattening of the right parieto-occipital region. The parietal eminences were large and prominent, but the skull was rather ill-filled.

The facial region was somewhat different from that of any of the other crania. The face was short and very broad on account of a great development and outward thrust of the zygomatic arches, and the orbits appeared to be much wider than in the others.

The anterior nasal orifice was short and broad, and the root of the nose wide and heavy, of a low type. The lower margin of the nasal orifice was indistinct, and the nasal spine was short, and there was no paraseptal line. The lateral margin of the orifice passed in a faint line to the socket of the central incisor tooth on the right side and to that of the lateral incisor on the left.

A slight prenasal fossa with indistinct boundaries was present. The molar teeth were present in the upper jaw and were large and massive. The lower jaw showed only a slight mental prominence, and the horizontal ramus was rounded rather than flat, and narrow in its vertical diameter.

No. 5.—This cranium differed in several respects very markedly from any of the former specimens. It was very long and narrow, and the parietal eminences were indistinct. The muscular ridges were feeble, although the skull was undoubtedly that of a male. The vault was high and the parietal regions were well-filled. The face was highly prognathous from the projection forwards of the alveolar margin. The anterior nasal orifice was narrow, and presented a sharp lower margin and a prominent nasal spine. The five teeth which were present, and the sockets of the others, showed no abnormality. The palate was long and narrow.

No. 6.—In general contour this skull resembled fairly closely the former specimen, but it was not quite so long nor so high. There was a large epipteric bone on the right side. The anterior nasal orifice was of much the same type as in the last specimen, and presented a sharp lower margin, and a distinct nasal spine.

No. 7.—This skull presented features which distinguished it clearly from all the others. In many respects it was obviously of a higher type, the sutures were tortuous, and the whole cranium large and well-filled. It was also brachycephalic. The face was orthognathous, and the lower margin of the nasal orifice was sharp and distinct, and there was a well-formed nasal spine. Another of the distinctive features of the skull was a marked asymmetry, due to a distinct flattening of the right parieto-occipital region. This flattening extended well down to the base of the skull and was of the same character as the distortion found among the crania of several races of New Guinea, which is generally ascribed to an artificial pressure applied to the head during youth.

A deformity of the same kind is described by Barnard Davies[1] in a skull from New Caledonia, but the deformity, he states, is most likely accidental, from laying the head to sleep in early life upon the ground. M. Bourgarel is satisfied that the natives do not use any apparatus to produce distortion of the skull.

Turner however[2] states that there is a widespread custom of distortion of the skull among the different tribes of New Guinea, *i.e.*, Papuans, and the same custom is prevalent in other localities also.

No. 8.—The last cranium of the series examined was that of a young female of New Caledonia, which was presented by Dr. Ramsay Smith in 1903, and was labelled "Tribe de Kanala." It was rather small, and in general contour was long and narrow, but had distinct parietal eminences, while the occipital region was narrow and pointed resembling No. 1, and some of the other specimens. The face was small and obviously not fully developed, and hence it is not of much value for racial characters.

CRANIOMETRIC OBSERVATIONS.

The crania were measured and the various indices were determined according to the scheme laid down by Sir Wm. Turner, and the cubic capacities were taken by filling the cranial cavity with shot, also according to Turner's method, with the following results. (Table A.)

ANALYSIS AND COMPARISON OF THE INDICES AND MEASUREMENTS.

Cubic capacities.—Five of the eight crania were microcephalic in character, the cubic capacities ranging from 1,180 c.cs. to 1,290 c.cs., but as this group includes two young specimens, only three of the eight adults were microcephalic. Two of the crania were mesocephalic with capacities of 1,380 c.cs. to 1,425 c.cs. while one only was of a relatively large capacity, and came into the group known as megacephalic, having a capacity of 1,500 c.cs.

The skull of lowest capacity, No. 1, is that of an adult, and the next lowest, No. 4, is also adult, and both possess male characters, and they do not appear to be merely small specimens of crania of the same race as those with higher capacities but are distinct from them in capacity and also in other characters.

The cranial capacity showed no relationship to the cephalic or to the altitudinal index, for the cranial index of the most capacious skull was 67, while that of the one next to it was 77, and the index of the skull of least capacity was 71.

Nor was there any other single feature which could be closely correlated to the cranial capacity, except the character of the anterior nasal aperture. Without exception, among the adult crania, those which had a well marked lower margin for the nose were of higher capacity than those in which there was no sharp margin.

[1] *Thesaurus Craniorum*, p. 308.

[2] *Challenger Reports, Zoology*, vol. 10, part 29.

TABLE A.

Group XXVIII. L. 1

Collection number	1	2	3	4	5	6	7	8
Age	Adult.	About 16.	Adult.	Adult.	Adult.	Adult.	Adult.	Young.
Sex	Male.	Male.	Female.	Male.	Male.	Female.	Female.	Female.
Cubic capacity	1180	1380	1260	1190	1500	1290	1425	1185
Glabello-occipital length ...	183	179	180	175	193	184	176	171
Basi-bregmatic height ...	133	128	132	132·5	143	135	135	124
Vertical Index	**72**	**71**	**73**	**75**	**74**	**73**	**76**	**72**
Minimum frontal diameter ...	91	92	90	90	90	89	92	82
Stephanic diameter	96	105	103	105	104	102	108	98
Asterionic diameter	103·5	103	108	101	107	106	106	96
Greatest parieto-squamous breadth	130	130·5	122	126	130	129	136	121
Cephalic Index	**71**	**73**	**67**	**72**	**67**	**70**	**77**	**70**
Horizontal circumference ...	498	489	497	480	525	500	484	467
Frontal longitudinal arc ...	125	121	126	118	131	120	122	120
Parietal „ „ ...	135	122	127	130	147	136	128	130
Occipital „ „ ...	114	129	116	110	128	127	112	105
Total „ „ ...	374	372	369	358	406	383	362	355
Vertical transverse arc ...	302	292	301	305	325	302	303	286
Basal transverse diameter ...	112	109	107·5	115	112	113	120	95
Vertical transverse circumference.	414	401	408·5	420	437	415	423	381
Length of foramen magnum	31·5	35	33	33	37	32	32	33
Basi-nasal length	96	88·5	95	99	99	98	100	88
Basi-alveolar length	99	93	100+	108·5	111	112	98	91
Gnathic Index	**103+**	**105**	**105**	**109**	**112**	**114**	**98**	**103**
Total longitudinal circumference.	501·5	495·5	497	480	542	513	494	476
Interzygomatic breadth ...	126	114	122·5	134·5	—	124	130	103
Intermalar „ ...	102	96	107	118	108	108	117	80
Nasio-mental length	96·5	91	105	99	—	—	—	—
Nasio-mental complete facial Index.	**76**	**80**	**86**	**73**	—	—	—	—
Nasio-alveolar length ...	61·5	54	57+	58	70	68	64	56
Maxillo-facial Index	**48**	**47**	**46**	**43**	—	**54**	**49**	**54**
Nasal height	41	40	45	40·5	48	47	52	40
Nasal width	25	24·5	22·5	28	24	24	25	22
Nasal Index	**61**	**61**	**50**	**69**	**50**	**51**	**48**	**55**
Orbital width...	35	36	37·5	37	40	38	41	36
Orbital height...	29	29	33	29	37	34	34	31
Orbital Index	**82**	**80**	**88**	**78**	**92**	**89**	**82**	**86**
Palato-maxillary length ...	53	48	53+	58	62	61	50	48
Palato-maxillary breadth ...	61	61	62·5	65	60	65	63	55
Palato-maxillary Index ...	**115**	**126**	**118**	**112**	**97**	**106**	**125**	**114**
Lower jaw. Symphysial height ...	30·5	24	29	30	—	—	—	—
Lower jaw. Coronoid „ ...	61	51	61	58	—	—	—	—
Lower jaw. Condyloid „ ...	58	50	64	65	—	—	—	—
Lower jaw. Gonio-symphysial length	93	78	91	97	—	—	—	—
Lower jaw. Inter-gonial width ...	83	78	91	93	—	—	—	—
Lower jaw. Breadth of ascending ramus.	35	35	36	45	—	—	—	—

Cephalic Index.—With the exception of one specimen, all the crania were dolichocephalic in character, the index varying from 67, which is the index in two specimens, to 73 which is the index in one, a young specimen. The one exception had an index of 77, and is therefore mesaticephalic, and this cranium differs in many other respects from all the others.

No distinction could be drawn as regards cephalic index between the crania from the eastern and those from the western part of the island; and in this respect the specimens do not confirm the statement of MM. de Quatrefages and Hamy,[1] that the tribes in the west are more dolichocephalic than those in the eastern portion.

Vertical Index.—The vertical indices ranged from 71 to 76.

The highest index was found in the specimen which was mesaticephalic, and which showed the parieto-occipital flattening to a marked degree. It is of course possible that this deformity has reduced the maximum length and produced an alteration in other directions and thus diminished the value of these indices.

The relationship of the basi-bregmatic height to the maximum width is a character of some value in dealing with crania from this region. In four specimens from New Caledonia, Barnard Davies[2] found that the average height exceeded the width by over half an inch, while in a large series of "Kanakas" which he examined the width exceeded the height, in many cases by as much as an inch.

Turner's researches on crania from the Pacific islands show that in the Melanesians the height of the skull exceeds the width, while in Polynesians the width is greater than the height. In twelve specimens in the Royal College of Surgeons' Museum from New Caledonia, or from the adjacent Isles of Pines, in no case does the width exceed the height; in one instance these two diameters are equal, but in all the other specimens the height exceeds the width very considerably.

In the present series, omitting the immature specimens, in all the specimens except one the same result is found, the one exceptional case being the brachycephalic specimen.

This fact lends additional evidence to the belief that it is a cranium racially different from the others.

Anterior Nasal Orifice.—The characters of the apertura pyriformis are of considerable interest in this series, since it is known to present special features among Polynesian crania.

The anterior aperture may be studied in two ways, first by measurement of its greatest vertical and transverse diameters, and comparing these, and again by an inspection of the character of the lower margin of the orifice.

The first method shows that the crania vary considerably in the shape of the nasal aperture. The index ranged from 48 to 69, the lowest index being found in the brachycephalic skull, which therefore, in this respect also, is different from the other specimens.

[1] *Crania Ethnica.*

[2] *Thesaurus Craniorum*, p. 308.

Three other specimens, Nos. 3, 5, and 6 resemble it to some extent with a slightly higher nasal index. These four specimens therefore belong to the group of mesorhine skulls, while the others have nasal indices varying from 55 to 69, and are in the platyrhine group.

Form of the Anterior Nasal Orifice.—Hovorka,[1] who has studied the form of the nasal aperture in great detail, points out that the lower margin of the nose, formed by the maxilla, is variable in its characters. It is often sharp and distinct, as is usual in European crania, but in other forms shallow fossae may appear on this margin, known as the prenasal fossae.

These fossae were first described by Zuckerkandl, in his description of the skulls from the Novara expedition, and their formation depends upon the fact that the lower border of the nasal orifice may be laid down in the form of two ridges, the posterior of which is a ridge running outwards and backwards on the floor of the nose, to lose itself in the nasal process of the maxilla, while the anterior passes to the facial aspect of that bone. Zuckerkandl found the prenasal fossae to be present in flatnosed people, and found them to be usually associated with prognathism, while Hamy found the lower margin sharp in orthognathous crania, but rounded in the gorilla and the chimpanzee.

Hovorka recognises four forms.—(1) The lower margin is sharp, known as the "forma anthropina." (2) The lower margin is in two lines which meet at the nasal spine and enclose between them on each side a distinct fossa, the "forma prenasalis." (3) The posterior line from the nasal spine passes to the side wall of the nose, while the lateral margin of the nose passes on to the facial aspect of the maxilla, the "forma infantilis." (4) The lower margin is rounded and indistinct, the "affenrinne." All these four varieties are present in the present collection, but the general tendency is towards the formation of the fossae. The various forms have also been described by Macalister,[2] who applies the term "oxycraspedote" to the European type, with a sharp lower margin, and that of "bothrocraspedote" to the form where there are distinct fossae, as is usually the case in the Polynesians. The third form met with frequently among Australian skulls is termed by him the "orygmocraspedote," and in it the lower edge of the lateral lip is prolonged on to the facial aspect of the maxilla and is lost in the elevation over the socket of the lateral incisor tooth.

Orbital Indices.—The relation of the height to the width of the orbits varied considerably among the specimens. Two were megaseme, three mesoseme, and the remainder were microseme.

The two presenting the high orbital openings were also distinguished by other characters, especially by their prognathism, from the others.

Gnathic Indices.—One cranium only, the brachycephalic one, was mesognathous in character, the rest being prognathous. This single specimen was almost orthognathous, with an index of 98, while the indices in the others ranged from 103 to 114. The prognathism was of the alveolar form.

[1] *Hovorka, Die aussere Nase.* [2] *Journal of Anat. and Phys.*, vol. 32.

CLASSIFICATION OF THE CRANIA.

From the foregoing detailed account of the characters and the measurements of the crania, it is evident that they do not all belong to one homogeneous racial group, in fact the individual crania differ from one another in practically every feature of importance. This fact, however, is not unexpected, since the population of the Pacific Islands consists of different races exhibiting different cranial characters, and with the improved means of communication now available, intermingling of these races may occur.

It is, however, clear that one of the specimens possesses characters differing in nearly every detail from all the others, and it appears to be an almost typical specimen of the Polynesian form of skull.

It is mesocephalic in capacity, and it is also mesaticephalic in its length-breadth index. The vertical index makes it almost metriocephalic, and the width exceeds the height. It is almost orthognathous and leptorhine. Comparison of its dimensions with the figures of other observers for Polynesian crania bring out its affinities. I have for this purpose selected some figures given by Duckworth[1] and the comparison is given below.

TABLE B.

	Skull No. 7.	Average of Polynesian Crania, Flower & Topinard.	Duckworth's Polynesian.
Breadth index	77	79·7	80
Height „	76	75·5	77·5
Alveolar „	98	98·6	98·1
Orbital „	82	91·6	84·5
Nasal „	48	47·9	46·7 ?
Palato-maxillary index ...	125	?	109·8
Cubic capacity	1425	1525	1552

From the close resemblance of the two sets of figures it is clear that the cranium is that of a Polynesian.

Omitting the immature specimens, the other crania approximate generally to the type described by Barnard Davies, and also by Flower and Topinard, as being characteristic of the inhabitants of New Caledonia. In them the skulls are

[1] *Studies in Anthropology.*

dolichocephalic, the height exceeds the width, and the general contour of the cranium is that of a high narrow arch.

Three of the specimens 1, 3 and 4, are fairly typical Melanesian crania, as is shown by the table below.

TABLE C.

	No. 1.	No. 3.	No. 4.	Average of Melanesian Crania, Flower & Topinard.	Average of Barnard Davies, New Caledonia.
Breadth index...	71	67	72	71·4	72
Height „ ...	72	73	75	74·9	77
Alveolar „ ...	103	105	109	103·4	
Orbital „ ...	82	88	78	80·6	
Nasal „ ...	61	50	69	55·6	
Palato-maxillary index.	115	118	112	?	
Cubic capacity...	1180	1260	1190	1460	

Two of the specimens, 5 and 6, are distinguished from the remainder by the high degree of prognathism which they present, and which is an unusual feature among the Melanesians.

Another of this group, No. 4, possesses very wide zygomata, and this feature lowers its facial indices, and suggests the possibility of the presence of a Mongolian strain.

It is evident, therefore, that among the crania which come from New Caledonia specimens can be recognised which conform closely to the type described by Flower and by Barnard Davies as characteristic of the Islanders, the principal feature of this type being the long, narrow, and highly vaulted cranium.

But crania are also found which evidently have belonged to persons of different races, especially Polynesian, and the population of the island also contains individuals with mixed characters.

The examination of those crania supports the following views :—

1. There is a distinct New Caledonia type of skull.
2. Polynesian, and possibly Mongolian, intermixture is present among the population.
3. A high degree of prognathism is present in some cases, which cannot be readily explained.

The two crania in which it is present resemble one another very closely in almost every respect, and they can be distinguished at a glance from the other specimens. This suggests the introduction of a foreign element.



FIG. 9.—SKULL NO. 8. YOUNG ♀, MELANESIAN IN GENERAL CHARACTER.

FIGURES.

PLATE VI.

Fig. 1.—Adult male, No. 1, of Melanesian type.

Fig. 2.—Adult male, No. 1, of Melanesian type, lateral view.

Fig. 3.—Immature specimen, No. 2, showing mixed features; notice especially the short wide nasal aperture.

Fig. 4.—Adult female, No. 3, Melanesian type.

PLATE VII.

Fig. 5.—Adult female, No. 4, Melanesian type of cranium, with mixed (Mongolian ?) facial characters.

Fig. 6.—Adult male, No. 5, with mixed characters; notice sharp lower margin of nose.

Fig. 7.—Adult female, No. 6, similar to above.

Fig. 8.—Adult male, No. 7, Polynesian type.

TEXT.

Fig. 9.—Young female skull, "tribe de Kanala," No. 8, Melanesian in general character.



FIG. 1.—SKULL NO. 1. ♂.
MELANESIAN TYPE.



FIG. 2.—SKULL NO. 1. ♂. NORMA LATERALIS.

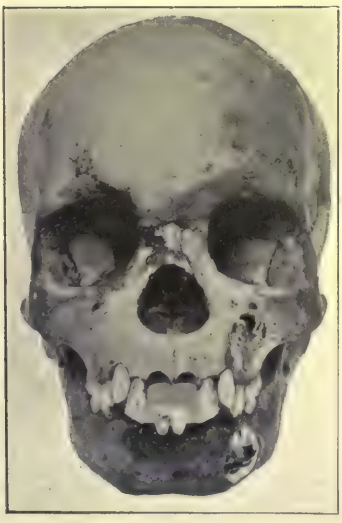


FIG. 3.—SKULL NO. 2. ♂.
IMMATURE, SHOWING MIXED CHARACTERS.



FIG. 4.—SKULL NO. 3. ♀.
MELANESIAN TYPE.

SKULLS FROM NEW CALEDONIA.

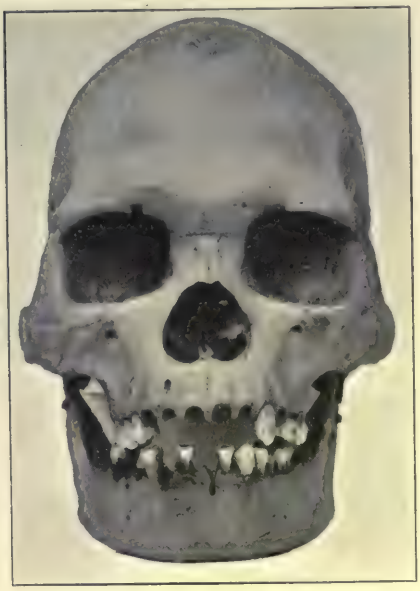


FIG. 5.—SKULL NO. 4. ♂.
MELANESIAN TYPE, WITH MIXED (MONGOLIAN ?) FACIAL CHARACTERS.



FIG. 6.—SKULL NO. 5. ♂.
SHOWING MIXED RACIAL CHARACTERS.

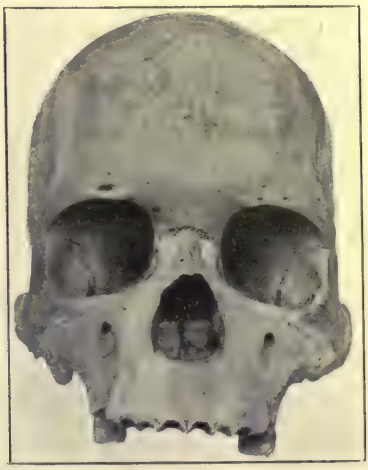


FIG. 7.—SKULL NO. 6. ♀.
RESEMBLES FIG. 6 IN MANY RESPECTS.

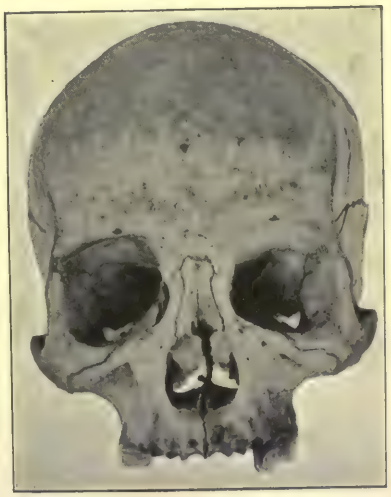


FIG. 8.—SKULL NO. 7. ♂.
POLYNESIAN TYPE.

SKULLS FROM NEW CALEDONIA.

MOCASSINS AND THEIR QUILL WORK.

By H. Ling Roth.

[With Plate VIII.]

When we first compare the footgear of the North-American Indians, known as mocassins, with that worn by the better-to-do Europeans at the end of the Middle Ages we are, I think, most of us inclined to believe that mocassins were introduced into America by Europeans. But such a belief is quite wrong. Although the first mention of the word mocassin, written *Mawhcassuns*, was made so late as 1612, by Wm. Strachey (Hakluyt Soc., vol. vi, 1849, p. 194), there is ample evidence as to the existence of the article quite contemporary with the advent of Europeans. So far back as 1527–1536, Nunez in the account of his retreat across Florida and the Mississippi to the west coast of Mexico, refers on several occasions to the footgear of the natives with whom he came into contact—natives who were then making the acquaintance of their destroyers for the first time, and to whom articles of European manufacture had not yet filtered down. There are also numerous references to, and descriptions of, mocassins in the Jesuit Relations.

The characteristic of the mocassin lies in the fact that the sole and upper are made in one piece of the same quality of prepared skin, which, at the present day, we often call buckskin, chamois leather or wash-leather. But as changes were, no doubt, from time immemorial in progress amongst the North-American Indians as elsewhere, we find that, while some tribes continued to use what we may call the primitive article, others adopted an improved form which was provided with a sole made of green hide. This transition has been going on even in modern times, for the old members of the Blackfoot Indians have quite recently told Clark Wissler that mocassins were formerly made without soles, and of a single piece of skin, with the seam at the heel, but for a long time they have used soles of rawhide with soft tanned skin for uppers (*Annual Arch. Report for* 1905, Toronto, 1906, p. 166). Perhaps further light could be thrown on the transition by enquiry amongst Indians, who use the more modern form of mocassin, and who are unaware of any change, as to whether in their ceremonial observances the earlier or later form is worn.

Long ago Catlin pointed out that there was a prevailing and striking similarity of costume amongst most of the North-Western tribes. He could not say that the dress of the Mandans was decidedly distinct from that of the Crows or the Blackfoot, the Assiniboines or the Sioux; yet there were modes of stitching or embroidering in every tribe which might at once enable the traveller, who was

familiar with their modes, to detect or distinguish the dress of any tribe. These differences consisted, he said, generally in the fashions of constructing the head-dress, or of garnishing their dresses with porcupine quills, which they used in great profusion (p. 100). Elsewhere he remarked that a Crow was known wherever he was met by his beautiful white dress! The skins used by the Blackfoot were chiefly dressed black, or of a dark brown colour; from which circumstance, in all probability, they, having black leggings or mocassins, have got the name of Black-foot (pp. 45, 46)! He said nothing as to the distinguishing marks of the mocassins. All the same we have only to glance cursorily at any collection of mocassins to see at once how widely they differ, and to conclude correctly that the Indians themselves must, except in the case of remote living tribes, have been able to distinguish between the different sorts worn by their neighbours. Henry relates (i, p. 435) that when his friends were on the trail of some Sioux (who had stolen horses) at a

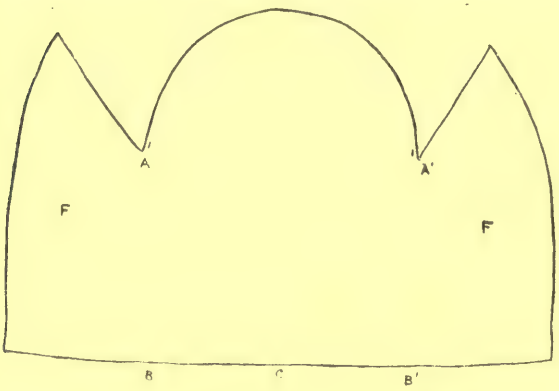


FIG. 1.—PATTERN OF A KICKAPU MOCASSIN.

The central portion, with the heel at C, forms the sole. It folds over so that B is joined to B′ forming an inverted ⊥ seam at C; A is joined to A′ and the rounded portion drawn over the toes. F F are the flaps or ankle pieces. Bankfield Mus.

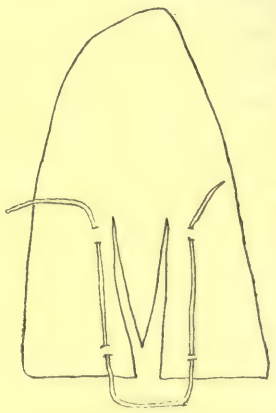


FIG. 2.—PATTERN OF A SHOSHONE UPPER. BANKFIELD MUS.

deserted camp, they discovered upwards of a hundred pair of old shoes, and on examining the tracks made from the different forms of shoes were able to conclude that three different tribes made up the party, viz.: the Yankton, the Gens des Feuilles, and some other. Out of bravado, too, a retreating raiding party would leave an arrow or a mocassin in a conspicuous position to let the despoiled ones know who had robbed them.

But we have no need practically to go back to the old travellers in search of the distinctive marks—these old travellers do not give them in any case—for the distinctions hold good at the present day. There is (1) the general outline of the piece of leather which makes up the mocassin; (2) the form of the sole, whether in one piece with the upper, or a separate greenhide sole; (3) the ankle flaps; (4) the seams; (5) the tongue; (6) the strings; (7) the ornamentation[1] or colouring. A few examples will suffice, viz.:—

[1] See "Decorative Art of the Sioux Indians," by Clark Wissler, *Bull. Am. Mus. Nat. Hist.*, xviii, 1904.

A *Kickapu* mocassin, made of one piece of skin; sole broad, rounded at the toes with slight indication of position of big toe; flaps cut straight at the back and not joined together, pointed in front; sewn at the heel, inverted ⊥ seam from root of toe nail and along centre of instep upwards; no tongue; strings start from the opening in front and are otherwise quite loose; bud and petal ornamentation over instep.

A *Shoshone* mocassin made with greenhide sole; sole somewhat narrow; flaps rising obliquely above the ankle and sewn together; uppers joined at the back; long triangular tongue ending in a point; loose strings slipped through at four places—two openings on each side of the foot; beadwork ornamentation on the instep in the form of a man standing with arms outstretched and legs apart, and a post on each side of him.

An *Apache* mocassin, upper made in two pieces—the upper proper sewn at back and wedge-shaped tongue in reversed position to that of the Shoshone tongue; separate sole, very pointed, with point of large toe barely rounded, the strings follow the opening for the insertion of the foot and pass through the tongue to hold it up; each right half coloured a light orange, with dark red cross below the little toe and a narrow band, also dark red, following the seam down the front: each left piece daubed with light ochre and a dark red cross below the little toe; a dark red band follows the seam between the sole and the upper all the way round. There is also a fringe sewn down the centre, between the two halves of the uppers, formed of a band of leather slit into strips, round the ends of which pieces of tin have been hammered.

In the small collection at my disposal at Bankfield Museum, Halifax, it is not possible to say for certain that the distinctions described are all characteristic, but they tend to show that the distinctions are very marked. In so far as I know, no list has yet been compiled of the distinctive character of the footgear of the tribes of North America, and it is not possible to do this in England. It may not be out of place to mention here that in the United States there are evidently factories where mocassins are turned out by machinery, and I have had such articles sent to me from America, and have been told they were really made by Indians—but the Indians who made them must have been factory hands!

The care of a traveller's mocassins was a marked feature of Indian hospitality. Bradbury, always on good terms with Indians, tells us (*Early Western Travels*, p. 179) that the squaw in some instances examined his dress and in particular his *mockasons*; if any repair was wanting she brought a small leather bag, in which she kept her awls and split sinew and put it to rights. This care of a visitor's mocassins was, however, a native custom extended to Europeans. Tanner (*Trav.*, Lond., 1830, p. 89) refers to the case of an Indian who had got lost and to whom the Crees, amongst whom he fell, gave a new buffalo robe and a handsome pair of mocassins, "an example of hospitality much practised by Indians who have not had much intercourse with the whites." Tanner was to all intents and purposes an Indian, and he remarks elsewhere (p. 90) that his own family were once thus treated by

the Crees, "the principal wife of the chief examining our mocassins and gave each a new pair." It was, in fact, the women's duty to dress the leather, "make and mend the shoes of the whole family, dry the men's shoes and rub them quite soft before they present them to their husbands in the morning" (Masson's *Recits de Voy. Nipigon Indians*, p. 257). It is also mentioned by one of the Jesuit Fathers that on the hunter's return his wife takes his leggings and shoes, wrings them out if they are wet and puts them to dry (xi, p. 211).

According to the Jesuit Fathers, in summer on the soft ground of the plains the Indians went without mocassins, but in rough country, as we might have expected, the wearing of mocassins was a necessity, and their absence was a sign of distress. Lewis and Clark's party mention the anxiety of some of their Indian companions who, referring to the tracks of two barefooted Indians, considered such barefootedness a proof that those who made the marks must have suffered very severely (iii, p. 161). From the knowledge of the suffering caused by the absence of mocassins, coupled with the well known desire of proving their valour, arose the heroic custom, mentioned by Bradbury (*Early Western Travels*, p. 65), of a noted Osage warrior, not being a chief, who on leading a war party had, amongst other restrictions, to travel "without mockasons or even leggings."

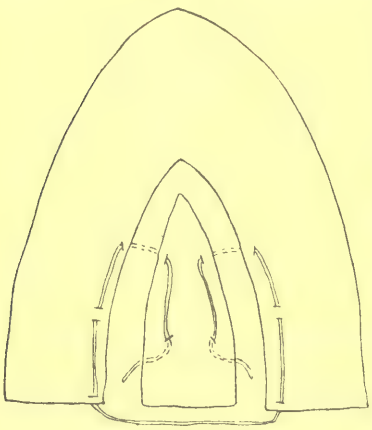


FIG. 3.—PATTERN OF APACHE UPPER AND TONGUE. BANKFIELD MUS.

Regarding the comfort or discomfort in the use of mocassins, according to European ideas, I have not been able to gather much information, but no doubt owing to the Indian having been brought up to their use from infancy they were a comfortable footgear until an improved article was discovered. Catlin tells us on one occasion, "on this march we were all travelling in mocassins, which being made without any soles, according to the Indian custom, had but little support for the foot underneath and consequently soon subjected us to excruciating pain, whilst walking according to the civilised mode with the toes turned out" (p. 219). On the other hand Long, speaking of the Omahaws, says: "In stepping the feet are universally placed upon the ground in a parallel manner with each other; they say that turning out the toes in walking, as well as turning them inward is a very disadvantageous mode of progression in high grass or in narrow pathways" (xv, p. 71). Both these authorities agree as to the position of the toes adopted by the Indians when walking; and the want of support caused by the absence of a hard sole can be appreciated. Perhaps some of the numerous American field ethnologists can add further particulars regarding walking in mocassins.

Long (*Western Trav.*, xv, pp. 66, 67) says, that when on a march the mourners would walk barefoot in testimony of their mourning. But this discarding of the mocassin had ultimately a symbolical meaning. Before the Shoshones would

smoke the pipe of peace "they pulled off their mocassins, a custom," Lewis and Clark afterwards learnt, "which indicates the sacred sincerity of their profession when they smoke with a stranger, and which imprecates on themselves the misery of going barefoot for ever if they are faithless to their words, a penalty by no means light to those who rove over the thorny plains of their country" (ii, p. 52).

It was no doubt a kindred feeling which induced them to put mocassins on to the dying, a custom which the Jesuit Fathers noticed early in the seventeenth century but were unable to explain (xi, p. 251). At an Omahaw funeral Long mentions the placing of a pair of mocassins with other articles which were to be used on the long journey, which the deceased was supposed to be about to perform (xv, p. 6, and xvi, p. 123).

As mentioned above, the women have to prepare the skins; but they do not seem to have been in the habit of preparing the skins, required for mocassins, in a different way from that of skins required for other purposes except when the hair of the animal was to be kept on. Beyond, therefore, referring to the writings of those who have described skin dressing nothing more need be said on the subject here.[1]

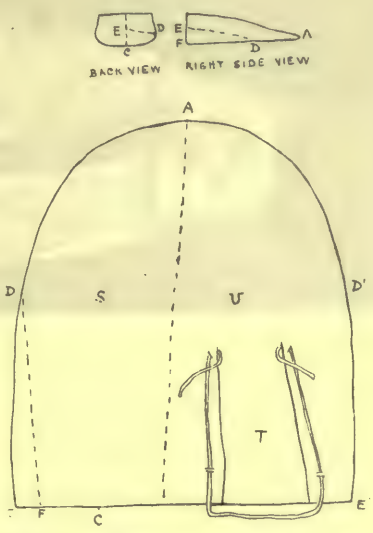


FIG. 4.—PATTERN OF A MOCASSIN MADE ALL IN ONE PIECE.

As shown, S is the underside of the sole, which is folded under at the dotted line A, until D touches D′ and the triangular portion DEF comes up on the right side of the foot, E being joined to E′; C is the centre of the heel, U is the upper and T the tongue. Bankfield Mus.

In their quill work the North Americans had, and a few of their survivors have still, a method of dress (and basket) ornamentation which is unique—not being found in any other part of the world. The quill work is at the same time pleasing and most artistic. The first mention of this work, which I have been able to trace, is by Champlaine, in his voyage to Canada, 1603, who relates that the women were adorned with "Matachia, which are paternosters and chaines interlaced, made of the hair of the Porkespicke, which they dye of various colours" (Purchas, xviii, p. 194). It is also mentioned by G. S. Theodat, a "Recollect" of St. Francis, who travelled amongst the Hurons in 1624 (*Le Grand Voy.*, Paris, 1632, reprinted Paris, 1865). He says the women "font aussi comme vne espece de gibesiere de cuir ou sac à petun, sur lesquels elles font des ouurages digne d'admiration, avec du poil de porc espic, coloré de rouge, noir, blanc et bleu, qui sont les couleurs quelles font si viues, que les notres

[1] R. W. Schufeldt, "The Navajo Tanner," *Proc. U.S. Nat. Mus.*, ii, 1888, pp. 59–66, very complete; Alfred L. Kroeber, *Bull. Amer. Mus. Nat. Hist.*, xviii, 1902, pp. 26, 27; Catlin, pp. 45, 46; Long, xiv, pp. 312, 313; Henry, pp. 360, 382, 395; Hennepin (p. 191), and Schoolcraft, who gives an illustration of a dressing frame and of several of the leather dressing adzes used.

ne semblent point en approcher" (p. 91); and again: "quelqu'vnes d'entrelles ont aussi des ceintures et autres parures faictes de poil de porc espic, teincts en rouge cramoisy, et puis fort proprement tissuës" (p. 134). Father Hennepin, who was in 1680 on the Mississippi, where the natives use wooden canoes and not bark canoes, refers to a chief who had some relative's bones carefully wrapped up in skins ornamented with several red and white bands of porc epic (p. 332). There does not seem to be much recorded as to the use of porcupine quills for purposes other than the special form of decoration under notice, although Fraser, writing in 1805 (Masson's *Recits*, i, p. 350), says the Corbeaux Indians substitute porcupine tails for

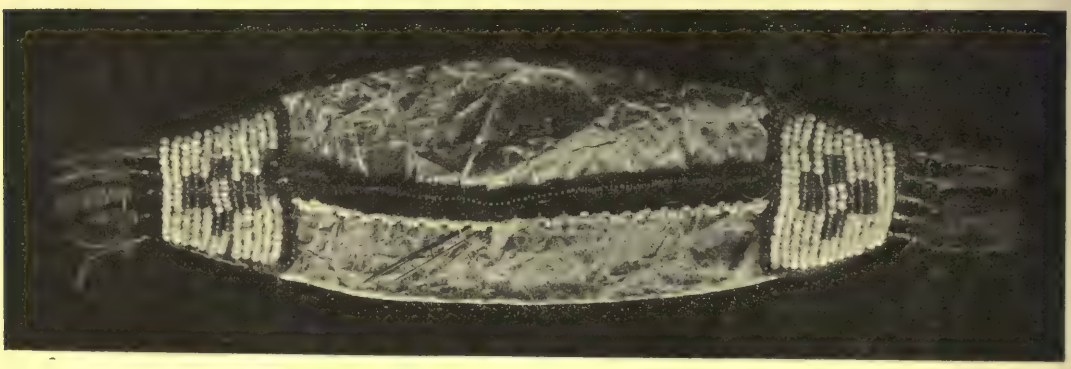


FIG. 5.—POUCH FOR HOLDING QUILLS MADE OF BISON INTESTINE.
M. A. Owen Collection, University Mus., Cambridge.

combs, and Lewis and Clark say of the Teton Okandandas, a Sioux tribe, that they wore loose robes of buffalo skin dressed white and adorned with porcupine quills loosely fixed so as to make a jingling noise when in motion (i, p. 139).



FIG. 7.—ARAPAHO QUILL FLATTENER. After Kroeber.

In so far as I am aware no one has yet published any description of the method in which the quill is applied as a decoration to mocassins or any other portion of the wash-leather dress of the North-American Indian. Long boasts of what he learnt to do among the Indians "as regular as the natives." He adds, "I also made makissins, or Indian shoes, of deer skins, drest and smoked to make the leather soft and pliable, and worked with porcupine quills and small beads, etc." (*Voy. and Trav.*, London, 1791, pp. 71, 72), but like every other writer he leaves us to find out how the quills were applied.

The only quills which appear to be used are the short ones taken from the tail of the Canada porcupine (*Erethizon dorsatus*), averaging in length about 65 mm. (2½ in.). They are used without any preparation except that of dyeing and flattening. Kroeber, speaking of the Arapaho, says the quills were softened in the mouth and flattened with a bone (*op. cit.* p. 28), Fig. 7.

As to the dyeing Alex. Mackenzie was informed that coal was used as a dye "with which the natives render their quills black" (p. 26), and Geo. Heriot (*Trav.*, Lond., 1807, p. 293), says that, apart from the colour extracted from the juice

of particular plants and berries, "they extract with considerable dexterity, the colour of European cloths, which they transfer to the leather and to the porcupine quills, with which they fabricate their little works."

In answer to some enquiries I addressed to Miss Mary Alicia Owen (author of the *Folk Lore of the Musquakie Indians*) regarding the provenance of the colours used, that lady very kindly sent me the information which follows: "Yellow is made from the bark of the hickory tree (*Carya alba*); the quills are soaked in an infusion made from boiling water and bark, and afterwards washed in a weak lye made from wood ashes, and then dried in the shade. Green is obtained from the boiled juice of wheat or common garden spinach. Purple and blue are obtained from the juice of the grape (*Vitis cordifolia*), which grows wild and has a villainously sour, almost black fruit, as small as a currant, with juice the colour of claret. Scarlet and orange are procured from onion skins. Crimson, pink and magenta, are the stains of the poke-berry (*Phytolacca decandra*). Once I saw an exquisite pink which I was told was made from the petals of the prairie rose (*Rosa setigera*), and on another occasion I saw a magnificent red which an old woman said was made from dog's blood and mussel shells; I begged to be allowed to see the process, but the old woman refused permission. Other colours are made from roots, leaves and bark, but the Musquakies as a rule care little for them and are losing the secret of preparing them. When the Indians have the opportunity of buying dyes from the traders they do so; when they have not this opportunity they produce their own dyes. Of late years there has been set up the fashion among some Indians of working the quills uncoloured into patterns on birch bark. The bark is coated till it is soft and the quills are stuck in after the holes are made with an awl. It is probable that the uncoloured quills are used in the wet bark because dyed ones might run and fade. It is most probable that the use of uncoloured quills is quite a modern one as all the Indians are very fond of bright colours, and it is the colouring of the quills which gives them their charm—without the colouring the quill work falls flat and becomes objectless."

The quills are sharp enough and strong enough to withstand being gently pressed into wash-leather without the aid of an awl to prepare the way. But, in so far as I can ascertain from the specimens of quill work which have come under my observation, in no case are the points of the quills used for fixing them on to the leather, although at a first examination one gets the impression that the quills are so fixed. This is no doubt partly due to the elasticity of the woolly-like surface of wash-leather whereby holes or threads are quickly covered up, and partly to the quills being placed intentionally very closely together. Perhaps the fact that sinew is used instead of thread may also help the misconception.

The details of the quill working which follow are taken from the four articles illustrated in Figs. 8–11 (Pl. VIII), viz., two mocassins said to come from Hudson's Bay, a knife sheath and a frontlet—all in Bankfield Museum, Halifax, Yorks.

In Fig. 12 I have reproduced one of the commonest quill patterns, made of all white quills, and have shown everything that can be seen of it either with the naked

eye or with a pocket lens. Felt with the finger, the pattern is found to sit tight on to the surface of the leather, and without opening it up one can but conclude

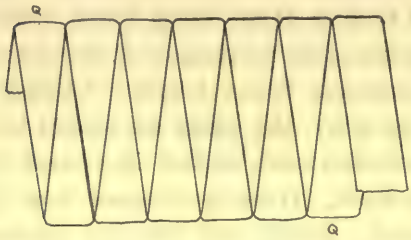


FIG. 12.—WHITE QUILL WORK ON MOCASSIN, FIG. 8.
Q = Quill.

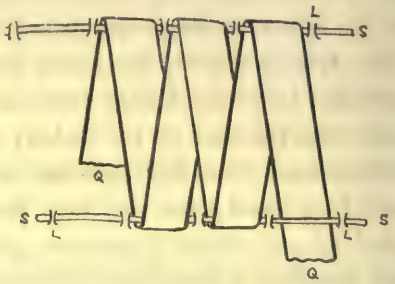


FIG. 13.—THE SAME AS FIG. 12, BUT SPREAD OUT TO SHOW HOW APPLIED.
L = Loop in surface of leather; S = Sinew; Q = Quill.

that the quills have been driven into the leather at their points. But such is not the case. In Fig. 13 I show what has been really done. A series of loops, L, have been made in the surface of the leather by means of the woman's awl, the thorn;

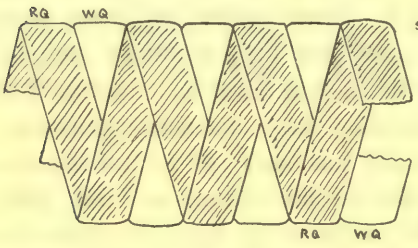


FIG. 14.—WHITE AND RED QUILL WORK ON A POUCH IN BANKFIELD MUS.
RQ = Red quill; WQ = White quill.



FIG. 15.—THE SAME AS FIG. 14, BUT SPREAD OUT TO SHOW HOW APPLIED.
L = Loop; S = Sinew; RQ = Red quill; WQ = White quill.

through these a piece of sinew has been drawn and then the flattened quill has been placed in position under and over the sinew as shown. Nothing could be simpler, yet the elasticity of the materials and the skill of the workwoman are so great that

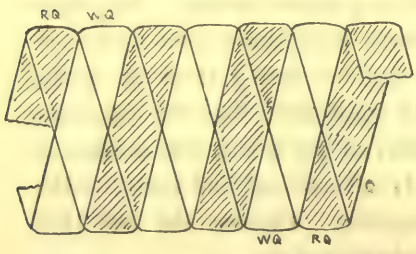


FIG. 16.—ANOTHER ARRANGEMENT OF WHITE AND RED QUILL WORK ON MOCASSIN, FIG. 8.

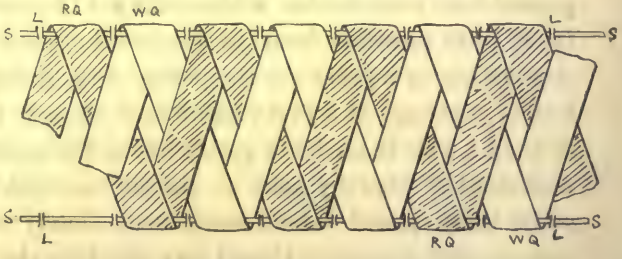


FIG. 17.—THE SAME AS FIG. 16, BUT SPREAD OUT TO SHOW METHOD OF APPLICATION.

they completely hide the method by which the result is achieved. In a similar way are produced the designs with two or more coloured sets of quills. Fig. 14 shows an arrangement in red and white, which arrangement is explained

by the diagram in Fig. 15. In Figs. 16 and 17 another arrangement is exhibited, together with its explanation.

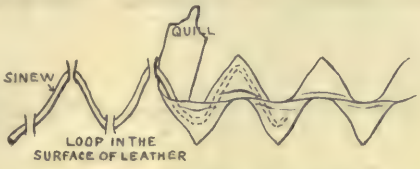


FIG. 18.—QUILL WORK BORDER ON MOCASSIN, FIG. 8.

A different style of ornamentation is shown in Fig. 18, being the outer border of Fig. 8. Here the sinew instead of being drawn through the loops in a straight line is made to run through an upper and lower loop alternately, and the quill is *twisted* round the sinew instead of being kept flat. Perhaps the quill is moistened to prevent breakage when it is being twisted.



FIG. 19.—QUILL WORK APPLIED TO COVER A SEAM.
E = the two edges of leather placed together; S = the "cord" (of sinew),
T = the thread of sinew which joins the two pieces of leather; Q = the quill.

A different method again is illustrated in Fig. 19. The quill decoration in this case is intended to cover the seam—seams appear to be always "corded," generally with sinew. There is another method of quill application used for decoration where there is no seam, such as is shown in Fig. 20; the difference being that where a seam is to be covered the quill is twisted round the "cord" sinew, Fig. 19, and where there is no seam the quill is squeezed lengthwise and sewn on. This is a less effective method, and, I am inclined to think, is of late introduction. It forms the general decoration on the knife sheath, Fig. 10, and is similar to that on the mocassin, Fig. 9. But the quill border on the knife sheath, while also stitched on, is done so in a different manner, the fastened down quill being bent alternately over to cover the stitch, Fig. 21.

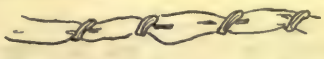


FIG 20.—QUILL SQUEEZED LENGTHWISE AND SEWN ON MOCASSIN, FIG. 9, AND KNIFE SHEATH, FIG. 10.



FIG. 21.—QUILL BORDER ON EDGE OF KNIFE SHEATH, FIG. 10.

A very intricate piece of work is shown in Fig. 22, which illustrates the joint of the ankle flap with the uppers on the mocassin, Fig. 8. A band of leather (the "cord" of European sewing) is placed along the two edges of leather to be fastened together and the quill wrapped round this, but on the front or outside

edge the sewing thread (sinew) is made to run through each coil whereby the cord is secured to the joint. Here again the method is entirely hidden and it is only discoverable by carefully opening out the work. The result of the work is very effective.

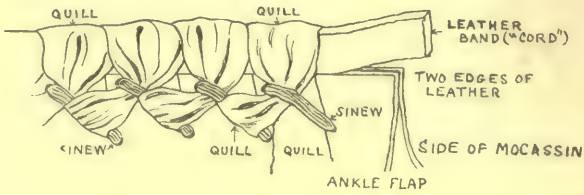


FIG. 22.—QUILL WORK APPLIED IN MOCASSIN, FIG. 8, TO COVER UP THE EDGES OF THE LEATHER OF THE MOCASSIN AND THE ANKLE FLAP.

Quite different in every respect from all the foregoing methods is the quill work shown and explained in Figs. 23 and 24, taken from the central flat band of ornamentation on the mocassin, Fig. 9, already mentioned. It is the same as that

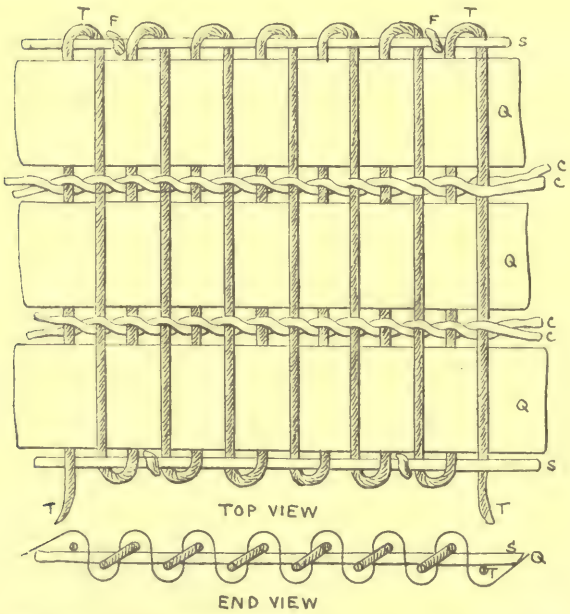


FIG. 23.—QUILL WORK FORMING THE ORNAMENTATION OF CENTRAL PIECE OVER INSTEP DOWN TO TOES OF MOCASSIN, FIG. 9, AND THE WHOLE OF THE ORNAMENTATION OF FRONTLET, FIG. 11.

T = Sinew used as thread to make the corrugations, S = Sinew at end of every third row of quills; C = Sinew to hold T in position; F = Stitches on to mocassin; Q = Quill.

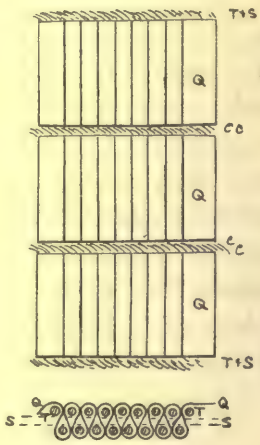


FIG. 24.—THE SAME AS FIG. 23, AS SEEN WHEN COMPLETED; WITH SECTION.

shown on the frontlet, Fig. 11. The quills are corrugated, Fig. 23, by means of tightly drawn sinew thread placed alternately over and under the quill, so that when the work is completed it gives the impression of being a set of narrow beads



FIG. 8.—MOCASSIN FROM HUDSON'S BAY. BANKFIELD MUSEUM.



FIG. 9.—MOCASSIN FROM HUDSON'S BAY. BANKFIELD MUSEUM.

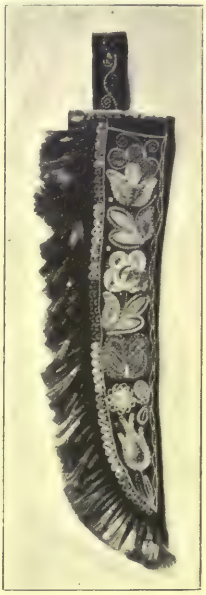
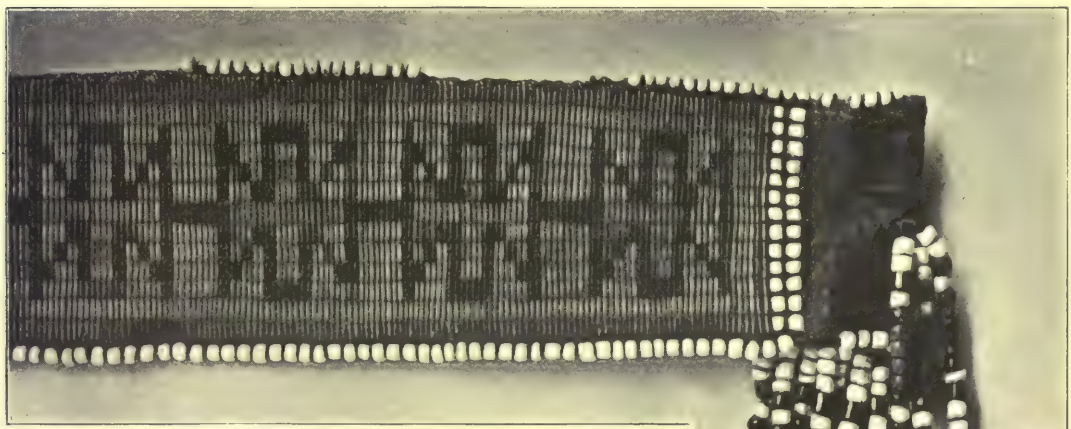


FIG. 10.—KNIFE-SHEATH FROM HUDSON'S BAY. BANKFIELD MUSEUM.



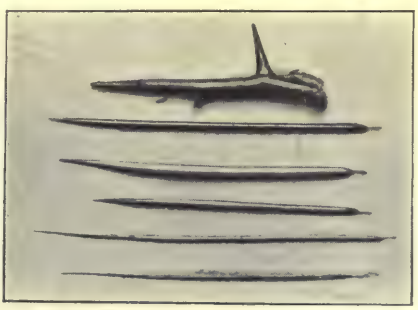


FIG. 6.—THORN AND QUILLS. UNIVERSITY MUSEUM, CAMBRIDGE.

FIG. 11.—FRONTLET FROM HUDSON'S BAY. BANKFIELD MUSEUM.

MOCASSINS AND THEIR QUILL WORK.

closely threaded, Fig. 24. When completed the little piece of ornamentation is sewn on to the article to be decorated.

As mentioned above I fail to find from any of the specimens at my disposal that the quills are fixed into the leather by means of their sharp pointed ends. That the decorative use of quills on leather may have originated that way from basket work is quite possible. At the same time I think that the method of affixing the quills by means of direct sewing, as in Figs. 20 and 21, is a later development which may have originated with seed or bead work. The development of quill work decoration may perhaps be surmised to have been as follows:—

1. Applied to basket-work or mat-work where the quill ends are inserted into the interstices of the plaiting.
2. Applied to leather work by means of pressing the points into the material.
3. The adoption of the loop and sinew.
4. Twisting quills round stitches of sinew.
5. Twisted or squeezed up quills sewn on.

European ornamentation, apart from bead work, is not infrequently put on, such as silk braid, flannel ankle flaps, etc., etc.; in Bankfield Museum there is an old mocassin, which has been in the collection over fifty years, ornamented with silk *tambour* stitch pure and simple.

THE KANO CHRONICLE.

Translated, with an Introduction, by H. R. Palmer.

[With Plates IX, X.]

Introductory.

The Hausa states, which form a large portion of the country now called Northern Nigeria, have been ruled since the beginning of the nineteenth century by Fulani,[1] who, under their chief Othman Dan Hodio, about the year 1807, ousted the former Hausa rulers on the plea of a religious revival. As it was known that Arabic literature and the Moslem faith had been introduced in the fifteenth century at latest, it was natural to suppose that some records had been kept of the reigns of the Hausa kings (Sarkis). Little, however, has hitherto come to light except for two MSS. which Dr. Barth discovered in Bornu dealing with that country, and the *Kano Chronicle*, of which there are several copies in existence, and which is mentioned by Lady Lugard (*Tropical Dependency*, p. 236). The copy, however, to which Lady Lugard alludes is not complete, since only forty-two kings are mentioned. The MS., which I have attempted to translate below, was found at Sabongari, near Katsina, and goes down to, and breaks off in, the time of Mohammed Belo, the forty-eighth king.

The MS. itself is of no great age, and must on internal evidence have been written during the latter part of the decade 1883–1893; but it probably represents some earlier record which has now perished. It is said, and no doubt with some truth, that the Fulani in their fanatical zeal, destroyed many old records and books, on the ground that they were the books of "Kafurai," for their *casus belli* was that the Hausa Sarkis were infidels, and as such deserved to be destroyed with all their works. The records on which the *Chronicle* must be based were apparently an exception. The authorship is unknown, and it is very difficult to make a guess. On the one hand the general style of the composition is quite unlike the usual "note" struck by the sons of Dan Hodio, Abdulahi and Mohammed Belo, and imitated by other Fulani writers. There is an almost complete absence of bias or partizanship. It is hardly possible that a Fulani mallam of the time of Dan Hodio, or even of the present time, could have related the expulsion of Mohamma Alwali, the last Hausa Sarki, without betraying his race. On the other hand the style of the Arabic is not at all like that usually found in the compositions of Hausa Mallams of the present day; there are not nearly enough "classical tags," so to speak, in it. A young Arab in the employ of the writer, who, though he can read and write *colloquial* Tripoli and Ghadamis Arabic, finds it difficult, and in fact impossible, to construe the Arabic books which are most commonly found in Hausaland, read and translated the MS. without difficulty. Kano was always

[1] The author considers Filane to be the correct spelling; the more generally accepted form is retained to avoid confusion.—Ed.

visited by mallams from different parts of the Sahara and Barbary, and they often resided there for long periods. That the author of the work was thoroughly *au fait* with the Kano dialect of Hausa, is evident from several phrases used in the book, for instance بارا عيبا used in a sense peculiar to Kano of "perforce." The original may perhaps have been written by some stranger from the north who settled in Kano, and collected the stories of former kings handed down by oral tradition.

The *Chronicle* has been translated as it stands, with the marginal notes of the text, in foot-notes. The names of the Sarkis (given in the margin by the author) are merely for convenience of reference. I have added approximate dates worked out by simply reckoning back from the length of reigns given, assuming the date of the Fulani entry into Kano as September of A.D. 1807 (A.H. 1222), which a careful comparison of various accounts has led me to believe is about the right date.

In themselves the lengths of the various reigns as given in the text would not carry much weight perhaps. There is, however, some confirmation in one or two cases which makes one inclined to believe in their substantial accuracy.

In a work attributed to Shehu Dan Hodio, he quotes Abdu Rahaman es Suyuti in a work on the Sudan called *Risalat ul Muluk* as writing a letter to various kings, among whom were Mohamma Ibn Matafa, Sarkin Agades, and Sarkin Ibrahim of Katsina. Suyuti died in 1505, and is known to have been acquainted with Abdu'l Magili Ben Marhili of Tuat. The latter is generally regarded as one of the first marabouts of importance who visited Hausaland, and is almost certainly the Abdu Rahaman or Karimi of the narrative, who visited Kano in the reign of Rimfa.

A tradition, quoted by Dr. Barter, and generally stated to be correct, makes Magili visit Katsina in the time of Ibrahim. There is also a general agreement that Ibrahim and Rimfa were contemporaries, and that Magili visited both Kano and Katsina.

Again, in the same work, Dan Hodio quotes a letter from Abdul Magili to "Abi Abdulahi Dan Umoru Mohamma," written in A.H. 897, A.D. 1492, in reply to a letter from "Dan Umoru," who must be Mohamma Rimfa, asking for an abridged edition of the *Mukhtassar* of Sidi Khalil.

The reckoning based on the length of reigns as given by the text makes Mohamma Rimfa reign A.H. 867–904 (A.D. 1463–1499), which exactly fits in with the facts mentioned above (*cf.* Cherbonneau, *Journal Asiatique*, Ser. v, vi, 391).

The *Chronicle* says that in the time of Yaji (A.D. 1349–1385) the Wongarawa (Mandingoes) came from Melle bringing with them the Moslem religion.

Now the great king of Melle, Mansa Musa, made his pilgrimage to Mecca in 1326, and in 1373 the Wazir Mari Jatah of Melle conquered Tekidda (near Asben). It would be extremely probable that about this date the rise of Mandingo power should make itself felt. There seems no reason why the introduction of Islam into Hausaland should not have taken place at the date ascribed to it in the text, though Lippert and other scholars seem to think that Magili was the first

Muhammadan missionary to reach Kano (*cf. Journal of the African Society*, July, 1905).

Again the *Bornu Chronicle* (as abridged by Barth, vol. ii, p. ii) makes Othman Kalnama take refuge in Kano in A.D. 1432. In Dauda's time (A.D. 1421–1438) a great Bornu prince called Dagachi (which simply means ruler or king) arrives in Kano and settles with a large following. The circumstances make it very probable that Dagachi is Othman Kalnama.

The various references in later reigns to Gobir, Zamfara, the Kworarafa, and Nupe are all chronologically correct approximately.

It seems therefore highly probable that, except for the very early kings, the *Chronicle* is roughly accurate.

The question of who the race were, who are described as conquering the primitive inhabitants of Kano, is somewhat difficult. On the other hand, the description of the Dalla stock seems to leave no doubt that they were full-blooded negroes. Assuming that the men of Dalla were of the tall negro type, an interesting comparison might be made between them and the people of the Hombori Hills whom M. Desplagnes calls "Habbe" in *Le Plateau Central Nigèrien.*

Roughly speaking, three very distinct influences have acted on the country which we call Hausaland—that is to say, the Emirates of Kano, Katsina, Zamfara, Gobir, Daura, Zaria, and the smaller states which were anciently called Unguru or Biram. These influences may be indicated briefly by the words Semitic, Hamitic, and Negro. The Semitic influences have been, at all events, within the later historic period, indirect.

The negro, on the other hand, divided by most ethnologists into short-legged pronounced prognathous, and tall slightly prognathous varieties, is necessarily the starting-point of any inquiry. It is upon these two types of negro that the various invaders from north and east—whom we may loosely term Hamitic—have acted and produced the mixture of races and ideas which characterize Hausaland. There is considerable evidence that the negro, at a not very distant time, extended much further north than at present, and that it is only within the last thousand years that he has been pushed so far south. Various guesses have been made at the composition of the invading peoples from the north, and the part they played in the prehistoric history of the Sudan. There are, no doubt, striking resemblances between the pre-dynastic customs of the inhabitants of Egypt and some modern Hausa customs: the shape of various agricultural implements is identical; "triads" of deities are common to both. As yet, however, the data are insufficient to warrant any very definite theory being held—and the truth, if it is ever discovered, can only be traced by working back from the historic and known to the unknown.

The often quoted story of Herodotus about the young Nasamonians, if true, means that in 500 B.C., the negro and negrito peoples were, as yet, not displaced from the Upper Niger The first historical kingdom of the West Sudan is that of Ghana—a Libyo-Berber civilisation which apparently flourished early in our era. M. Desplagnes recently excavated tombs or tumuli on the Niger

which seem to have been erected by these people, and are of construction similar to those described by El Bekri in his account of Ghana, and to others examined by the writer in the river valleys of Kano and Katsina.

It would appear, therefore, that from some date between 500 B.C. and A.D. 400, if not before, the inhabitants of Hausaland were subject to Libyo-Berber influences.

The next kingdom which comes into history is Bornu—according to Barth about the ninth century A.D.—situated at that time to the east of Lake Chad. Tribes coming from the east conquered the indigenous negroes. Native tradition says these tribes were Arabs and came from Yemen. The love of a Yemenite origin is a common failing of historians even more reliable than the Bornu Chronicler, but the more modern history of Darfur and Wadai shows that the story does not lack probability as regards the *race* of the invaders.

The countries between Ghana and Bornu are not mentioned by El Bekri or Edrisi—it is not until the time of Leo Africanus that Kano and Katsina were important enough to be known to the outside world.

But between A.D. 900 and A.D. 1513, the date of Leo's visit to the Sudan, certain peoples represented in the text by Bayajidda arrived at Daura and conquered the indigenous inhabitants of the Hausa States. The native tradition as to who they were, varies. The Fulani Sarkin, Muslimi Mohammed Bello, says (see *Denham and Chapperton*, ii, 399) that they were "slaves of the Sultan of Bornu." But this statement is made on the authority of Mohammed El Bakkri—a Kanuri! The well-known Daura legend, preserved in writing, says they came from Bagdad, and introduced the horse into Hausaland. Bayajidda, the ancestor of the Kings of Hausaland, mentioned in the footnote, p. 64, is represented as having arrived in Daura, slain a snake which inhabited a well, and married the Queen of Daura. He had previously escaped from the treachery of the Sultan of Bornu, who, having tampered successfully with the loyalty of his men, was plotting against his life—when he fled. This story would make Bagoda and his men Hamites. Other mallams maintain that the invading people were Teterre (Tatars). M. Desplagnes has a theory that Mongols formed an element in the tribes which overthrew Ghana about A.D. 1230. It is possible that a western migration of peoples of mixed origin accounts for the two stories, and that the same causes which presumably led to an advance in civilisation in Kano, degraded the Libyo-Berber civilisation of Ghana.

Vast ethnographical changes must have resulted from the rise of the Fatimids in North Africa about A.D. 900, and the disorders of A.D. 968, in Egypt, drove thousands of the mixed population into flight. Again the pressure of the Seljuks and other Turkmans about this time, may well have given rise to displacements of which we have here a far-off echo.

The only certain fact, however, is that about A.D. 1000 the Hausa States were occupied by an alien race coming from the east. This race or people ruled, though at different periods tributary to Songhay and Bornu, until displaced by the Fulani in 1807. It is they who are often called Habe, a word of which the

singular is Kādo. The name does as well as any other to express this people, but it by no means follows that the people of the Hombori region west of the Niger, called Habe by the Fulani, are connected with them—for the Fulani called any conquered negro people "Habe." For this reason it seems better to keep the word Hausa to express the post- A.D. 1000 and pre- A.D. 1807 inhabitants of Hausaland, provided that it is not used indiscriminately of any peoples who speak the "Hausa" language. In fact, Habe is a far wider word than Hausawa, and practically means any negro race. The primitive peoples of the Hombori and the Dalla stock of Kano may both be conveniently called "Habe.". The name in itself proves nothing.

Now the clans from the east which laid waste the kingdoms west of the Niger during the twelfth century were of the eponym "Serpent" (-Sâ) (Desplagnes, *Le Plateau Central Nigèrien*, p. 178 *sq.*) They become in various places, Susu, Sarrakole, Sauke, Sissoko, etc. We find that in 1346–1349 (*cf. Barth*, ii, 638) an early Sultan of Bornu fights the Sau or So (سو) "the original inhabitants of the greater part of the country between the Wau and Shari." The Kano Chronicler expressly states that the Emir Abdulahi Burja, who ruled about A.D. 1438, was the *first* Hausa Sarki to pay tribute to Bornu; while in 1421, as has been mentioned, a chief who very probably was Othman Kalnama, fled to Kano, when a revolt expelled him from Bornu.

We find therefore that when the Bornu princes began to extend their empire west of Tchad about 1346 they were opposed by a people called Sau, whom they had apparently been fighting for years: that a snake-killing hero is supposed to have founded the so-called "Hausa" dynasties: that about 1200 there was a great conquest by Sâ (Serpent Clans) west of the Niger; and finally that, after the Sultans of Bornu became paramount over Hausa about A.D. 1438, there is no more mention of So or Sau. The plural of Kādo is Habe; possibly the plural of Sâ or Sau is Hausa or Sausau? It is also curious that west of the Niger these Sousou or Serpent clans are represented as bringing the "horse" with them (Desplagnes, *op. cit.*, p. 483) as in the Daura legend. It may also be added that some form of serpent is the "totem" of nearly every non-Moslem Hausa community at the present day.

But whatever the origin of the invaders, they founded the Hausa "bokkoi" or seven Hausa states, and continued to rule all except Gobir, where the reigning families are said to be of Coptic origin. If we may trust the *Chronicle* the primitive Kano people had already advanced fairly well in arts and trades before the advent of the invaders. The conquerors' religion seems by implication to have been Muhammadan, and their chiefs are represented as suppressing pagan observances—a story which is difficult to believe; but in any case they soon lapsed into the same practices as their subjects, and the Wongarawa are later on credited with introducing Islam.

I can hardly hope that the rendering is entirely adequate—the general sense is seldom obscure, but the slipshod character of the writing often leaves minor points doubtful. I am indebted to Mr. C. L. Temple, Resident of Sokoto, Dr. D. Alexander, W.A.M.S., and Mr. W. Reid of Tripoli, for kind help in revising many parts of the translation.

The Kano Chronicle.

In the name of God, the merciful, the compassionate.
May God bless the noble Prophet.

This is the history of the lords of this country called Kano. Barbushe, once its chief, was of the stock of Dalla,[1] a black man of great stature and might, a hunter, who slew elephants with his stick and carried them on his head about nine miles. Dalla was of unknown race, but came to this land, and built a house on Dalla hill. There he lived—he and his wives. He had seven children—four boys and three girls—of whom the eldest was Garagéje. This Garagéje was the grandfather of Buzame, who was the father of Barbushe. Barbushe succeeded his forefathers in the knowledge of the lore of Dalla, for he was skilled in the various pagan rites. By his wonders and sorceries and the power he gained over his brethren he became chief and lord over them. Among the lesser chiefs with him were Guñzago, whose house was at the foot of Gorondutse to the east. After him came Gagiwa, father of Rubu, who was so strong that he caught elephants with rope. There were also Gubanásu, Ibrahim, Bardóje, Nisau, Kanfatau, Doje, Janbére, Gamakúra, Safátaro, Hangógo, and Gartsangi. These were next to Barbushe in rank. Tsanburo lived at Jigiria, and Jandámisa at Magum. The last named was the progenitor of the Rumáwa. From Gogau to Salamta the people traced their descent from Rumá, and were called Rumáwa because they became a great people. Hambaro's house was at Tanagar. Gambarjado, who lived at Fanisau, was the son of Nisau. All these and many more there were—pagans. From Toda to Dan Bakóshi and from Doji to Dankwoi all the people flocked to Barbushe on the two nights of Idi—for he was all-powerful at the sacrificial rites.

Now the name of the place sacred to their god was Kakua.[2] The god's name was Tchunburburai. It was a tree called Shamuz. The man who remained near this tree day and night was called Mai-Tchunburburai. The tree was surrounded by a wall, and no man could come within it save Barbushe. Whoever else entered, he entered but to die. Barbushe never descended from Dalla except on the two days of Idi. When the days drew near, the people came in from east and west and south and north, men and women alike. Some brought a black dog, some a black fowl, others a black he-goat, when they met together on the day of Jajibere at the foot of Dalla hill at eve. When darkness came, Barbushe went forth from his house with his drummers. He cried aloud and said: "Great father of Jimuna, we have come nigh to thy dwelling in supplication, Tchuburburai," and the people said: "Look on Tchuburburai, ye men of Kano! Look toward Dalla." Then Barbushe descended, and the people went with him to the god. And when they drew near, they sacrificed that which they had brought with them. Barbushe

[1] The name of a rock and also a man.
[2] Otherwise called Kagua.

entered the sacred place—he alone—and said: "I am the heir of Dalla, like it or no, follow me ye must, perforce." And all the people said: "Dweller on the rock, Lord of Mamale, we follow thee perforce." Thus they spoke and marched round the sacred place till the dawn, when they arose, naked as they were, and ate. Then would Barbushe come forth and tell them of all that would befall through the coming year, even concerning the stranger who should come to this land, whether good or ill. And he foretold how their dominion should be wrested from them, and their tree be cast down and burnt, and how this mosque should be built. "A man shall come," said he, "to this land with an army, and gain the mastery over us. They answered, "Why do you say this? it is an evil saying." Barbushe held his peace. "In sooth," said he, "you will see him in the sacred place of Tchunburburai; if he comes not in your time, assuredly he will come in the time of your children, and will conquer all in this country, and forget you and yours and exalt himself and his people for years to come." Then were they exceeding cast down. They knew well that he did not lie. So they believed him, and said: "What can we do to avert this great calamity?" He replied, "There is no cure but resignation." They resigned themselves. But the people were still grieving over this loss of dominion at some distant time, when Bagoda,[1] a generation later, came with his host to Kano. There is a dispute, however. Some deny this, and say that it was Bagoda's grandson[2] who first reached Kano, and that he[3] and his son[4] died at Sheme. He, at all events, entered Kano territory first. When he came, he found none of Barbushe's men, save Janbere, Hambarau, Gertsangi, Jandamissa, and Kanfatau. These said, "Is this man he of whom Barbushe told us?" Janbere said, "I swear by Tchububurai if you allow this people within our land, verily they will rule you, till you are of no account." The people refused to hearken to the words of Janbere, and allowed the strangers to enter the country, saying: "Where will Bagoda find strength to conquer us?"

So Bagoda and his host settled in Gazarzawa and built houses there. After seven months, they moved to Sheme. The district from Jakara to Damargu was called Gazarzawa; from Jakara to Santolo was called Zadawa; from Santolo to Burku was called Fongui; from Banfai to Wasai was called Zaura. From Wateri to the rock of Karia was called Dundunzuru: from Santolo to Shike, Shiriya: from Damargu to Kazauré, Sheme: from Burku to Kara, Gaudé: from Kara to Amnagu, Gija: from Karmashe to Ringim, Tokawa. Now the chiefs whom Bagoda found holding sway over this land acknowledged no supreme lord save Tchunburburai and the grove of Jakara. Jakara was called "Kurmin Bakkin Rua," because its water was black, and it was surrounded by the grove.[5]

[1] Bagoda. He was son of Bauwo son of Bayajidda, of the stock of Ham the son of Noah. It was by reason of his high lineage, that Bauwo conquered all Hausaland—he and his six sons. The first of them was Kazura: then came Bagoda, Ubandoma, Gamgama, Kumaio, and Kasanki. When Bauwo died, Kazura became Emir of Daura. Bagoda went to Kano, Ubandoma to Kobir, Gamgama to Zakzak, Kumaio to Kashina, and Kasanki to Kur or Nero. This is a reliable account in a book of the names of the Emirs of Kano.

[2] Gijinmasu. [3] Bagoda. [4] Warisi. [5] The "Ghailata" means trees.

The pagans stood in awe of the terrors of their god and this grove, which stretched from Gorondumasa to Dausara. The branches and limbs of its trees were still—save, if trouble were coming on this land, it would shriek thrice, and smoke would issue forth in Tchuburburai, which was in the midst of the water. Then they would bring a black dog and sacrifice it at the foot of Tchuburburai. They sacrificed a black he-goat in the grove. If the shrieks and smoke continued, the trouble would indeed reach them, but if they ceased, then the trouble was stayed. The name of the grove was Matsama and the name of Tchunburburai was Randaya.

The greatest of the chiefs of the country was Mazauda, the grandfather of Sarkin Makafi. Gijigiji was the blacksmith: Bugazau was the brewer: Hanburki doctored every sickness: Danbuntunia, the watchman of the town at night, was the progenitor of the Kurmawa. Tsoron Maje was "Sarkin Samri," and Jandodo was "Sarkin Makada Gundua da Kuru." Beside these there was Maguji, who begot the Maguzawa, and was the miner and smelter among them. Again there was Asanni the forefather of minstrels and chief of the dancers. Bakonyaki was the archer. Awar, grandfather of the Awrawa, worked salt of Awar. He was Sarkin Rua of this whole country. In all there were eleven of these pagan chiefs, and each was head of a large clan. They were the original stock of Kano.

I. Bagoda, Son of Bauwo.

A.H. 389–455. A.D. 999–1063.

Then came Bagoda with his host, and was the first Sarki of this land. His name was Daud. His mother's name was Kaunasu. He began by occupying Dirani for two years. Thence he moved to Barka, and built a city called Talutawa, where he reigned two years.

The names of the pagan chiefs whom Bagoda met, were Jankare, Biju, Buduri (who had many children—about a hundred) and Ribo. Bagoda overcame them, and killed their leader Jankare. Then he came to Sheme, and found Gabusani, Bauni, Gazauri, Dubgege, Fasataro, and Bakin Bunu there. He conquered them all, and built a city, and reigned at Sheme sixty-six years.

II. Warisi, Son of Bagoda.

A.H. 455–488. A.D. 1063–1095.

The second Sarki was Warisi son of Bagoda. His mother's name was Saju. Those who were near him were Galadima Mele, Barwa Jimra, Buram (so called because he was the Sarki's son), Maidawaki Abdulahi, Sarkin Gija Karmayi, Maidalla Zakar, Makuwu, Magaaiki Gawarkura, Makama Gargi, Jarumai Goshin Wuta, Jarmai Bakushi, Bardai Duna, and Dawaki Surfan. These were the most important chiefs, but there were many more. Gawarkura said, "O Sarki of this land, if you wish to govern it, east and west and south and north, keep close to Gazarzawa, since it is the key of the country, and has not a strong god. When you

come there, beguile the chiefs with gifts, and so rule them and their god." The Sarki replied, "No, I have not the strength; I am too old." Warisi ruled Kano thirty-three years.

III. Gijimasu, Son of Warisi.

A.H. 488–528. A.D. 1095–1134.

Gijimasu son of Warisi was the third Sarki. His mother's name was Yānas. When he came to power he left Sheme and went to Gazarzawa. Some, however, say that it was his son Tsaraki who came to this place and built a city. The latter is the better version. It was here he ruled. Mazuda said, "This Sarki has come here in order to destroy our god and our grove of sacrifice." The people said, "He has not power to destroy our god, in our time at least." So Gijimasu and his people built a house in Gazarzawa. He beguiled the elders with gifts, till by his gifts he obtained dominion over them. They said, "What a good man this is! how well he treats us!" Mazuda said, "I want to give my daughter to his son in marriage." But Bugazau prevented him carrying out his plan. The Sarki consulted the people about building a city. The people agreed: "Come," they said, "let us build, for we have the power and the strength." So they began to build the city. They began the wall from Raria. The Sarki slaughtered a hundred cattle on the first day of the work.

They continued the work to the gate of Bazugar, and from there to the water gate and on to the gate of Adama, and the gate of Gudau: then past the gates of Waika, Kansakali, and Kawungari as far as the gate of Tuji. There were eight gates. Sarkin Rano built a city called Zamnagaba. He began building from Rímin Kira, and carried the wall through Wawan Toro, Tafasa, Kusarua, and Kadába to the gate of Bai. He ruled all the country as far as the lands of Sarkin Gano, Sarkin Dab, Sarkin Debbi, Sarkin Ringim, and Dan Bakonyaki. Santolo alone stood out against him, for its people were many and pagans. No one was able to rule over them. The Sarkis of Gano, Dab, and Debbi came to Hausaland nine years before Bagoda. But Buram, Isa, Baba, Kududufi, Akassan, and others of the Kano chiefs, men of the princely clan,[1] came with Bagoda. Gijimasu ruled forty years—then he died.

IV. Nawata and Gawata.

A.H. 528–530. A.D. 1134–1136.

The rule of the twins Nawata and Gawata, children of Gijimasu, was the fourth reign Their mother was Munsada. Together they ruled the city of Kano for seven months; then one of them died; the other was left. The remaining one ruled one year and five months, and then he died. Altogether they ruled two years.

[1] For this reason all their descendants were called after these, their forefathers, and the names have remained as "titles" of princes to this day. Such titles are Dan Buram, Dan Isa, Dan Baba, Dan Akassan, Dan Kududufi and others, like Dan Dermai and Dan Goriba.

V. Yusa or Tsaraki, Son of Gijimasu.

A.H. 530–590. A.D. 1136–1194.

The fifth Sarki was Yusa, called Tsaraki. He was the son of Gijimasu. He it was who completed the walls of Kano, as is well known. He raided Karaie, and camped at Badari five months till the inhabitants submitted to him. From Gurmai to Farinrua the people paid him tribute. Then he returned to his country. His mighty men of war were Tuje, Fasau, Iyagari, and Kamfaragi. All these had no fear in war. In Yusa's reign shields (*Garkwa*) were first used. He reigned sixty years. The name of his mother was Yankuma or Yankuna. He died.

VI. Naguji, Son of Tsaraki.

A.H. 590–645. A.D. 1194–1247.

The sixth Sarki was Naguji. His mother's name was Yankuma or Muntáras. He was generous, but a man of violent passions. From Kura to Tsangaya he ravaged the country, and forced the people, willing or unwilling, to follow him. He camped at Basema two years for the purpose of attacking Santolo, but he was worsted in the war and returned to Kano. He found the pagans there on the verge of revolt; so he cajoled them with talk, and executed their leader, Samagi, the son of Mazadau, Dorini son of Bugazau, Burtsar Gānguta son of Tsoron Maje, and Buzuzu son of Jandodo. When they were dead the rest of the people said, "We are willing to follow you, O Sarki, because we must." The Sarki said to them, "If you are willing to follow me show me the secrets of this god of yours." But they replied, "We will not show you the secrets of our god." So the Sarki punished them. Naguji was the first Sarki who collected a land tax of one-eighth of the crop from all husbandmen. He ruled all the land of Kano save Santolo which stood out against him. He ruled fifty-five years.

VII. Gugua, Son of Gijimasu.

A.H. 645-689. A.D. 1247–1290.

Gugua was the seventh Sarki. His mother's name was Munsada. He was a man of much tact and subtlety. He had a face remarkable for its expression. He was liberal, eloquent, wise, and magnanimous. All these qualities he turned to account in ruling the pagans and in discovering the mysteries of their god. They hated him. When he knew that they hated him he said to his men, "How shall I plan to get the better of these pagans and destroy their god." Ture and Galadina Bangare and Berde Kilmo said, "There can be no plan between them and us, nothing but war; we will conquer them and their god." When the pagans heard of this they said in secret, "When the ears hear, then is the body saved." The chief pagans assembled at dead of night, forty in number, at the foot of the sacred tree. Allah alone knows what took place there. They came forth when

the sun rose and went to the Sarki. They said, "O Sarki, when the night of Idi comes we will tell you the mysteries of our god." He agreed, for he was glad at heart, and gave them gifts abundantly. That night an apparition appeared to the Sarki in his sleep—a man with a red snake in his hand. He struck the Sarki with the snake and said to him, "Of two things choose one. Either thou mayest know the mysteries, in which case thou wilt die, or thou mayest not know the mysteries, in which case thou wilt not die." The Sarki said, "No! No! No!"

Now when the Sarki rose from his sleep he told his men what he had seen in the vision. They said to him, "What do you see in it?" He said, "What do *you* see?" They said, "We see war?" The Sarki said nothing, he spoke not a word, but suddenly he was struck blind. He remained blind for many years. He ruled Kano forty-four years. Twenty-two years he saw, and twenty-two he was blind. Then the power passed from him.

VIII. Shekkarau, Son of Tsaraki.

A.H. 689–706. A.D. 1290–1307.

The eighth Sarki was Shekkarau. His mother's name was Auta. When he became Sarki his men said to him, "Sarkin Kano, what do you see in the talk of the people of this city?" He said, "I see nothing between us except things we can settle without fighting." They replied, "If you try to make peace with the people they will say that you are afraid. If they come to you and make smooth talk, turn away from them; then you would not be acting wrongly. If matters do not fall out thus we will fight them, and if we prevail over them we will cut the throats of all their chief men and destroy their god." These counsels prevailed. All the pagans came to the Sarki with many presents and said, "Sarki, and Lord over us, we come to you to say to you one word: do not take notice of what we have done, we pray you, but put away the slanderous counsel of your advisers. If the domains of a ruler are wide, he should be patient; if they are not so, he will not obtain possession of the whole country by impatience." The Sarki said to them, "Your talk is true," and left them their customs and power. They said, "Were it not for fear of what may result we would have told the Sarki the secrets of our god." The chief of them, Samagi, said, "If we show him the secrets of our god we shall lose all our power, and we and our generation will be forgotten." So the dispute continued till the Sarki died. Shekkarau was Sarki seventeen years.

IX. Tsamia, Son of Shekkarau.

A.H. 706–743. A.D. 1307–1343.

The ninth Sarki was Tsamia, called Barandamasu. His mother's name was Salmata. In his time the cult of Tchibiri was first practised. When he came to the throne he assembled the pagans and said to them, "Love transmits love, and hate transmits hate; there is nothing between us except bows and spears and

swords and shields; there is no deceit and no deceiver except he who is afraid." Tsamia excelled all men in courage, dignity, impetuosity in war, vindictiveness, and strength. He had nine men who were equal to a thousand. The greatest was Madawaki Bajeri, and after him Burdi-Kunkuru, Dan-kududufi-Tanko, Dan Burran Bakaki, Jarumai Garaji, Makama Gumki, Danunus Baurire, Sarkin Damargu Gabdodo and Jekafada Masabi. When these men came to the battle-field with their Sarki they feared nothing, but were ever victorious. Now when the pagans of Kano heard the words of their Sarki, fear seized their hearts. They assembled at the place of their god and prayed to be shown who would gain the mastery, they or the Sarki. It was foretold them that they would be overcome. They knew that their god would not lie. Their chief said, "I see no means of deliverance from the Sarki except we pay him money." His men said, "We agree." So they were made to pay jizia. They collected two hundred slaves within seven days and took them to the Sarki. The Sarki said, "I do not want your slaves." So they returned home. Now on a certain Saturday the Sarki sent a messenger called Marukarshi to them saying to him: "Tell them that on Thursday I am coming to Kagwa,[1] if Allah so wills, that I may enter, and see what is inside. I will destroy the wall and burn the tree." So the messenger went and told them. When they heard the word of the Sarki, they assembled on the Thursday at the place of their god, pagans of town and country alike—a crowd as had never been seen before. Of drums and cymbals there were a thousand and four hundred and more than four hundred captains of spearmen. They marched round the place of their god from evening until the morning. When the morning broke Sarkin Kano came forth from his house, and went to the place of the god. In front of him were seventy men, each with a shield made of elephant's hide. When the Sarki came near to the place of the god he prevented the pagans entering. As the fight waxed hot, the Sarki cried, "Where is Bajeri?" Bajeri heard the words of the Sarki, and took a spear and rushed into the battle, cutting his way until he reached the wall of the sacred place. He entered, and seeing a man with his back against the tree holding a red snake, attacked him. The man leapt up and made a great shout; fire breathed from his mouth until smoke filled the whole place round about; he rushed out; and, in his attempt to flee, made for the water-gate, followed by the Sarki, and plunged into the water. The Sarki and his followers stayed hunting for the man in the water, but he escaped and went to Dankwoi, where they left him. Hence it is that if any warrior drinks the water of Dankwoi he does not prevail in battle. The Sarki returned to the tree, and destroyed the wall together with all else connected with "Tchibiri" which was beneath the tree. All the pagans had in the meantime fled, except Makare Dan Samagi and Dunguzu Dan Dorini. The Sarki said to them, "Why do you not run away?" They said, "Where were we to run to?" "Praise be to God," said the Sarki. "Tell me the secret of your god." They told him. When he had heard, the Sarki said

[1] The place of their sacrifices.

to Danguzu, "I make you Sarkin Tchibiri." He said to Makare, "I make you Sarkin Gazarzawa." He said to Gamazo, "I make you Sarkin Kurmi." In the time of this Sarki long horns were first used in Kano. The tune that they played was "Stand firm, Kano is your city." He reigned thirty-seven years.

X. OSUMANU ZAMNAGAWA, SON OF SHEKKARAU.

A.H. 743–750. A.D. 1343–1349.

The tenth Sarki was Zamnagawa, called Osumanu. The name of his mother was Kumyerku. He was called Zamna-gawa because he killed Tsamia. He shut the doors of the palace and remained in his house for seven days. After that day he went out. It is not known how Tsamia was made away with; whether Zamnagawa ate him or buried him, no one knows. In the time of Zamnagawa, there was no war in the land, east and west, north and south. All was peace. The Maguzawa left the city and went to live in the country at Fongui. The Rumawa came in a body to the Sarki. They said to him, "You are our Sarki, you have made a Sarkin Gazarzawa and a chief of the Kurmawa, make us a chief also." The Sarki said, "I hear." So they went back to their homes. The Sarki then took counsel with his men and said, "I want to give my son the chieftainship of the Rumawa." And all his men said, "We agree." So he gave his son the chieftainship of the Rumawa, whose town had become great and populous. Zamnagawa ruled seven years.

XI. YAJI, SON OF TSAMIA.

A.H. 750–787. A.D. 1349–1385.

The eleventh Sarki was Yaji, called Ali. His mother was Maganarku. He was called Yaji because he had a bad temper when he was a boy, and the name stuck to him. He drove the Serikin Rano from Zamna Gaba, went to Rano, and reigned at Bunu two years. Then he removed to Kur together with the Ajawa and Worjawa and Aurawa. He stayed there. In Yaji's time the Wongarawa came from Mele, bringing the Muhammadan religion. The name of their leader was Abdurahaman Zaite. Others were Yakubu, Mandawali, Famori, Bilkasim, Kanaji, Dukere, Sheshe, Kebe, Murtuku, Liman Jibjin Yallabu, the father of Serikin Pawa, Gurdumus, Auta, Laual, Liman Madatai and others—about forty in all. When they came they commanded the Sarki to observe the times of prayer. He complied, and made Gurdamus his Liman, and Laual his Muezzin. Auta cut the throats of whatever flesh was eaten. Mandawali was Liman of all the Wongarawa and of the chief men of Kano. Zaite was their Alkali. The Sarki commanded every town in Kano country to observe the times of prayer. So they all did so. A mosque was built beneath the sacred tree facing east, and prayers were made at the five appointed times in it. The Sarkin Gazarzawa was opposed to prayer, and when the Moslems after praying had gone home, he would come with his men and defile the whole

mosque and cover it with filth. Danbugi was told off to patrol round the mosque with well-armed men from evening until morning. He kept up a constant halloo. For all that the pagans tried to win him and his men over. Some of his men followed the pagans and went away, but he and the rest refused. The defilement continued till Sheshe said to Famori, "There is no cure for this but prayer." The people assented. They gathered together on a Tuesday in the mosque at the evening hour of prayer and prayed against the pagans until sunrise. They only came away when the sun was well up. Allah received graciously the prayers addressed to him. The chief of the pagans was struck blind that day, and afterwards all the pagans who were present at the defilement—they and all their women. After this they were all afraid. Yaji turned the chief of the pagans out of his office and said to him, "Be thou Sarki among the blind." In the days of Yaji, it is said, Sarkin Debbi, Sarkin Dab and Sarkin Gano brought horses to Kano, but this story is not worthy of credence. Yaji said to the Wongarawa, "I want you to make prayer so that I may conquer the men of Santolo, for if I conquer Santolo every town in the country will follow me, since Santolo is the key of the south." They said, "We will pray for you—but we will not pray except beside the moat of Santolo itself." So the Sarki set forth together with the Wongarawa, and they went to Santolo. He had with him a hundred and eleven men. Fifty of them were in front of the Wongarawa and sixty in front of himself. The chief among his men were Jarumai Gobarra Dagga Samma, Jakafada Kulli, Ragumar Giwa, Makama Butache, Maidawaki Koamna, Berdi Sheggi, Sarki Zaura Gamati, Dan Buram Gantururu, Dan Makŏo Dagazo, Galadima Tuntu and Sarkin Surdi Maguri. Others were Gauji, Garoji, Tankarau, Kargagi, Karfasha, Kutunku Toro, Kampachi, Gorongiwa the Galadima,[1] Zaki, Bambcli and others—altogether sixty.

Now when he came to Santolo, the Sarki camped near Duji. Duji was the name of a man. In the dead of night the Wongarawa went to Santolo together with Yaji and marched round the city and prayed till daybreak. When the day broke they returned to their camp. When the sun was up they returned to Santolo eager for battle. The men of Santolo came out of the town and met them in the open. Fighting went on from morning until night. Neither side prevailed. The Kanawa retired to Duji; the men of Santulu returned to their homes. The Sarkin Kano was very sore at heart. Famori said, "Do not be grieved! if Allah so wills we will defeat them." The Sarki was pleased with his talk. Kosa, the Sarki's slave, said, "My lord, I will tell you the secrets of the enemy; there are eight men inside the city and no one can pass the moat unless he kills them." Famori said, "Do you know their names?" He said, "I know them." So Famori said, "What are their names?" And Kosa replied, "The name of the greatest is Hambari, and after him Gwoshin Bauna, Kafiwuta, Gurgurra Karifi, Gandar Giwa, Hamburkin Toka, Zan Kaddakere and Gumbar Wakke. Gwoji said, "If I see Hambari I will kill him, if Allah so wills." At sunrise the Sarki returned to the attack on Santolo

[1] From this all Galadimas are called Gorongiwa.

with black looks. He took a spear in his hand. Gwoji[1] was in front of him, Zaite was on his right hand, Famori on his left, and behind him was Sheshe. Behind them were the rest of the Wongarawa and Kanawa. When they came near to Santolo all the pagans came out to battle. Gwoji saw Hambari, and girding up his loins dashed into the fray. The pagans rushed at Gwoji, but he withstood them, and when they gave way, lunged at Hambari with his spear. Hambari caught him by the throat and dragged him from his horse; but in vain, for Gwoji drew his knife, and ran him through, and so he died. Then Gwoji mounted his horse and entered Santolo, and all the Kanawa followed him and stormed the town. The Sarki commanded all the inhabitants to be killed except women and little children. Gwoji entered the place of their god, with Kosa and Guragu, and found a bell, and two horns, a battle-axe and leg-irons. Gwoji took the bell and the two horns. Kosa took the battle-axe, and Guragu the leg-irons. Yaji stayed seven days in the town and destroyed the place of sacrifice, and after dismantling its wall and tree, returned to Kano. He said to Gwoji, "Choose whatever you want." Gwoji said, "I only want to become Madawakin Kano." The Sarki said, "I give you the office."

Gasatoro, who was turned out of the post of Madawaki, built a house at Gawo, and for that reason was known as Madawakin Gawo, to distinguish the two. The next year the Sarki went to war with Warji and stayed there some time. At this time all the pagan tribes were subject to him, from Biyri to Fanda. The Kworarafa alone refused to follow him, so he went to their country. When he came to their town, they were afraid to fight and all fled up the hill at Tagara. The Sarki camped there also for seven months. No one came down from the rock. At last the pagans paid him a hundred slaves. Because of this the song in praise of Yaji was made, which runs: "Yaji, conqueror of the rocky heights, scatterer of hosts, lord of the town." It is said that he died here at Kworarafa. Perhaps he died at Kano. He ruled thirty-seven years.

XII. Bugaya, Son of Tsamia.

A.H. 787–792. A.D. 1385–1390.

The twelfth Sarki was Bugaya, called Mohammed. He had the same father and mother as Yaji. The name of his mother was Maganarku. The reason he was called Bugaya was as follows. After Zamnagawa killed Tsamia, he made overtures to his widow Maganarku, but she said, "I am with child." So Zamnagawa gave her drugs, without her knowledge, to procure an abortion. In spite of this, however, she gave birth to a living child, and gave him the name of Bugaya. It was this Sarki who ordered the Maguzawa to leave the rock of Fongui and scatter themselves through the country. He then gave all

[1] Hence the Madawakin Kano is sung as Gwoji Maikwugi, Kosa as Kosa Maibarandami, and Guragu as Guragu of the Meri. Afterwards Kosa was given the title of Dawaki, and Guragu that of Dan Maji—thus it is related.

power into the hands of the Galadima, and sought repose. The country was now peaceful, and regular tribute was paid to the Sarki. No one knew anything of his character even to the day of his death. He reigned five years. When he died the Liman Madatai was ordered to pray over his body and Lowal to wash it and Turbana, Jigawa and Kusuba to help him. They washed the body and put it in a shroud, and took it out to burial. The Liman prayed over the body. Bugaya was the first Sarkin Kano who was buried at Madatai.

XIII. Kanajeji, Son of Yaji.

A.H. 792–812. A.D. 1390–1410.

The thirteenth Sarki was Kanajeji. His father's name was Yaji. His mother's name was Aunaka. He was a Sarki who engaged in many wars. He hardly lived in Kano at all, but scoured the country round and conquered the towns. He lived for some time near the rock of Gija. He sent to the Kworarafa and asked why they did not pay him tribute. They gave him two hundred slaves. Then he returned to Kano and kept sending the Kworarafa horses while they continued to send him slaves. Kanajeji was the first Hausa Sarki to introduce "Lifidi" and iron helmets and coats of mail for battle. They were introduced because in the war at Umbatu the losses had been so heavy. He visited Kano and returned to Umbatu the next year, but he had no success in the war. He returned a second time to Kano, and again went out the following year. He again failed, but said, "I will not return home, if Allah wills, until I conquer the enemy." He remained at Betu two years. The inhabitants, unable to till their fields, were at length starved out, and had to give in to him. They gave him a thousand male, and a thousand female slaves, their own children. They also gave him another two thousand slaves. Then peace was made. The Sarkin Kano said: "No one shall again conquer Umbatu as I have conquered it, though he may gain spoil." In the following year the Sarki made war on Zukzuk and sat down in Turunku. The men of Zukzuk came out and defeated the Kano host, saying, "What is Kano! Kano is 'bush.'" The Sarkin Kano went back to Kano in a rage and said: "What shall I do to conquer these men of Zukzuk?" The Sarkin Tchibiri said: "Re-establish the god that your father and grandfather destroyed." The Sarki said: "True, but tell me what I am to do with it." The Sarkin Tchibiri said: "Cut a branch from this tree." The Sarki cut off a branch. When it was cut, the Sarki found a red snake in the branch. He killed the snake, and made two *huffi* with its skin. He then made four *dundufa* and eight *kuntakuru* from the branch. These objects he took to Dankwoi and threw them into the water and went home. After waiting forty days he came back to the water, and removed the objects to the house of Sarkin Tchibiri. Sarkin Tchibiri sewed the rest of the snake's skin round the drums and said to Kanajeji, "Whatever you wish for in this world, do as our forefathers did of old." Kanajeji said: "Show me, and I will do even as they did." The Sarkin Tchibiri took off his robe and put on the *huffi* of

snake's skin and walked round the tree forty times, singing the song of Barbushe. Kanajeji did as Sarkin Tchibiri did, and walked round the tree forty times. The next year he set out to war with Zukzuk. He encamped at Gadaz. The Sarkin Zukzuk came out and they fought; the men of Kano killed the Sarkin Zukzuk. The Zukzuk men fled, scattered in ones and twos, and the chiefs of Zukzuk were killed. The Sarkin Kano entered Zukzuk and lived there close to the Shika eight months. The people gave him a vast amount of tribute. Because of this feat the song of Kanajeji was sung, which runs: "Son of Kano, hurler of the *kere*, Kanajeji, drinker of the water of Shika, preventer of washing in the Kubanni, Lord of the town, Lord of the land." Kanajeji returned to Kano. Among his great men of war were Berdi Gutu, Jarumai Sabbo, Maidawaki Babaki, Makama Toro, Dan Burram Jatau, Jakafada Idiri, Jambori Sarkin Zaura Bugau, Lifidi Buzuzu and Dan Akassan Goderi. He reigned twenty years.

XIV. Umaru, Son of Kanajeji.

A.H. 812–824. A.D. 1410–1421.

The fourteenth Sarki was Umaru. He mother's name was Yatara. He was a mallam earnest in prayer. He was a pupil of Dan Gurdamus Ibrahimu and a friend of Abubakra. When he became Sarkin Kano, his friend upbraided and left him and went to Bornu, where he remained eleven years. On his return to Kano, finding Umaru still Sarkin Kano, he said to him: "O Umaru, you still like the fickle dame who has played you false, with whom better reflection refuses to be troubled. In time you will be disgusted, and get over your liking for her. Then regret will be futile even if you do regret." He preached to him about the next world and its pains and punishments. He reviled this world and everything in it. Umaru said, "I accept your admonition." He called together all the Kanawa, and said to them: "This high estate is a trap for the erring: I wash my hands of it." Then he resigned, and went away with his friend. He spent the rest of his life in regret for his actions while he had been Sarki. Hence he was called "Dan Terko." He ruled twelve years. In his time there was no war and no robbery. The affairs of Kano were put into the hands of the Galadima. For this reason it was said of the Galadima Dana that he was the "Trusted guardian of the city, the dust-heap of disputes."

XV. Dauda, Son of Kanajeji.

A.H. 824–841. A.D. 1421–1438.

The fifteenth Sarki was Dauda Bakon Damisa. His mother was Auta. In his time Dagachi, a great prince, came from South Bornu with many men and mallams. He brought with him horse-drums and trumpets and flags and guns. When he came he sat down at Bomfai. The Sarkin Kano went to see him. When he saw that he was indeed a great prince, he returned home and took

counsel with his men and said, "Where is this man to stay?" The Galadima Babba said, "If you let him settle elsewhere than in Kano town, he will soon be master of that part of the country." The Sarki said, "Where can he stay here with his army—Kano is full of men—unless we increase the size of our town?" The Galadima was sent to see Dagachi and returned with him, and built a house for him and his men at Dorai. The Sarki said to his men, "What shall I give him to please him, and to make his heart glad?" The Galadima Babba said, "Give him whatever you wish, you are Sarki, you own everything." The Sarki said nothing. At that time he was about to start for war with Zaria, so he said to Dagachi, "When I go to war I will put all the affairs of Kano into your hands, city and country alike." So the Sarkin Kano went to war and left Dagachi in the town. Dagachi ruled the town for five months and became very wealthy. Then the Sarki returned. At this time Zaria, under Queen Amina, conquered all the towns as far as Kworarafa and Nupe. Every town paid tribute to her. The Sarkin Nupe sent forty eunuchs and ten thousand kolas to her. She first had eunuchs and kolas in Hausaland. In her time the whole of the products of the west were brought to Hausaland. Her conquests extended over thirty-four years. I will leave now the story of Amina and return to Sarkin Kano. Dauda Bakon Damisa ruled Kano seventeen years.

XVI. Abdulahi Burja, Son of Kanajeji.

A.H. 841–856. A.D. 1438–1452.

The sixteenth Sarki was Abdulahi Burja. His mother's name was Tekidda. There was no one like him for generosity. He was the first in Hausaland to give Bornu "tsare or gaisua." He opened roads from Bornu to Gwanja. He was the first to own camels in Hausaland. Sarkin Bornu left his country at this time and went to attack Asben, but as he could not find any water for his army he returned home. The next year every town in the west paid him "tsare." The Sarkin Kano went out to Khud and encamped there one year and six months. The Galadima Daudu went to wage war in the south. In Burja's time Karmashi conquered the Migawa. The Sarki went to Dussi. The Galadima Daudu said to him, "Return to Kano, I will do for you whatever you want done, and defeat your enemies." So the Sarkin Kano returned home. When he arrived in Kano, he found that Dagachi had assumed great power in the town, and collected wealth without end, and had built houses from his house as far as Salamta. It was Dagachi who made the market of Karabka. All this time the Galadima Daudu was in the south making war on the pagans every day, conquering them and taking them as slaves. Every month he sent a thousand slaves to Sarkin Kano. All the people of Kano flocked to him. There was no one left in Kano except the Sarki and very old men. Every day the Sarki sent to the Galadima horses, clothes and horse trapping.

The Galadima was sung as follows:—

Gatherer of the axes of the south :
Gatherer of the youth of the south :
Drum of Wealth, Galadima :
Drum of Land, Galadima.

He stayed seven years in the south. Slaves became very numerous in Kano. The Sarki sent to him to tell him to come back, so he returned. When he was returning, he stopped every three miles, and built a town. He left at each a thousand slaves, five hundred males, and five hundred females. He thus founded twenty-one towns, before he came to Kano. On arriving there he gave the Sarki three thousand slaves and said to him, "I have founded twenty-one towns, and in each I have left a thousand slaves, all yours." The Sarki asked him, "What are the names of the towns you have built?" The Galadima said, "Their names are Ibdabu." The Sarki said, "I make you ruler of all these towns and their domains." Because of this the Galadima was called "Daudu, the strength of the city." The next year the Sarki sent to Dussi to ask for a wife. He was the first Sarki who married a daughter of Sarkin Dussi, Sarkin Shirra and Sarkin Rano, and also a daughter of the Galadima. He ruled fifteen years.

XVII. DAKAUTA, SON OF ABDULAHI BURJA.

A.H. 856. A.D. 1452.

The seventeenth Sarki was Dakauta. He was dumb. The people said, "If he becomes Sarki he will be able to speak." When he had been made Sarki, and after one night did not speak, they turned him out again.

XVIII. ATUMA, SON OF DAKAUTA.

A.H. 856. A.D. 1452.

The eighteenth Sarki was Atuma, son of Dakauta. He was king for seven days only. He was turned out of the office of Sarki, for fear of trouble with the Galadima Dauda.

XIX. YAKUBU, SON OF ABDULAHI BURJA.

A.H. 856–867. A.D. 1452–1463.

The nineteenth Sarki was Yakubu, son of Tasafi. He was a good Sarki. In his time Agalfati came to Kano; he was Sarkin Gaia, and son of Sarkin Machina. Gaia came with his three brothers who became Sarkin Hadeijia, Sarkin Dal and Sarkin Gaiam. The Sarkin Hadeijia became Sarkin Gabbas, and was given Hadeijia. The Sarkin Gaia came to Kano and was given Gaia. The Sarkin Dal came to Kano and was given Dal. Sarkin Gaiam went to Zaria and was given Gaiam. In Yakubu's time the Fulani came to Hausaland from Mele, bringing

with them books on Divinity and Etymology. Formerly our doctors had, in addition to the Koran, only the books of the Law and the Traditions. The Fulani passed by and went to Bornu leaving a few men in Hausaland, together with some slaves and people who were tired of journeying. At this time too the Asbenawa came to Gobir, and salt became common in Hausaland. In the following year merchants from Gwanja began coming to Katsina; Beriberi came in large numbers, and a colony of Arabs arrived. Some of the Arabs settled in Kano and some in Katsina. There was no war in Hausaland in Yakubu's time. He sent ten horses to the Sarkin Nupe in order to buy eunuchs. The Sarkin Nupe gave him twelve eunuchs. Yakubu ruled Kano eleven years.

XX. Mohamma Rimfa, Son of Yakubu.

A.H. 867–904. A.D. 1463–1499.

The twentieth Sarki was Mohamma, son of Yakubu, commonly called Rimfa. His mother's name was Fasima Berana. He was a good man, just and learned. He can have no equal in might, from the time of the founding of Kano, until it shall end. In his time the Sherifs came to Kano. They were Abdu Rahaman and his people. There is a story that the Prophet appeared to Abdu Rahaman in a dream and said to him, "Get up and go west and establish Islam." Abdu Rahaman got up and took a handful of the soil of Medina, and put it in a cloth, and brought it to Hausaland.

Whenever he came to a town, he took a handful of the soil of the country and put it beside that of Medina. If they did not correspond he passed that town. So he journeyed until he came to Kano. And when he compared the soil of Kano with Medina soil they resembled one another and became as one soil. So he said, "This is the country that I saw in my dream." And he took up his abode at Panisau. Then he sent in to the Sarkin Kano. The Sarkin Kano Rimfa went out together with his men, and escorted Abdu Rahaman back to the city together with his men, of whom the chief were Hanatari, Gemindodo, Gadangami, Fokai and others, ten in all. Abdu Rahaman lived in Kano and established Islam. He brought with him many books. He ordered Rimfa to build a mosque for Friday, and to cut down the sacred tree and build a minaret on the site. And when he had established the Faith of Islam, and learned men had grown numerous in Kano, and all the country round had accepted the Faith, Abdu Karimi returned to Massar, leaving Sidi Fari as his deputy to carry on his work.

Rimfa was the author of twelve innovations in Kano. He built the Dakin Rimfa. The next year he extended the walls towards the Kofan Mata from the Kofan Dagachi and continued the work to Kofan Gertawasa and Kofan Kawayi, and from the Kofan Näissa to the Kofan Kansakali. The next year he entered his house. He established the Kurmi Market. He was the first Sarki who used "Dawakin Zaggi" in the war with Katsina. He was the first Sarki who practised "Kame." He appointed Durman to go round the dwellings of the Indabawa and

take every first-born virgin for him. He was the first Sarki to have a thousand wives. He began the custom of "Kulle." He began the "Tara-ta-Kano." He was the first to have "Kakaki" and "Figinni," and ostrich-feather sandals. It was in his reign that the Sallam Idi was first celebrated in Kano at Shadakoko. He began the custom of giving to eunuchs the offices of state, among them, Dan Kusuba, Dan Jigawa, Dan Tarbana, Sarkin Gabbas, Sarkin Tudu, Sarkin Rua, Maaji, Sarkin Bai, Sarkin Kofa. There were four eunuchs left without a title. He said to them, "I make you chiefs of the Treasury." The name of one was Turaki, another was Aljira; the names of the other two were Al-Soro and Kashe Kusa.

The Galadima Dabuli built a house at Goda, and the Madawaki Badosa built a house at Hori. Chiroma Bugaya built a house at Dabazaro. Surely there was no Sarki more powerful than Rimfa! He was sung as: "The Arab Sarki, of wide sway." In his time occurred the first war with Katsina. It lasted eleven years, without either side winning. He ruled thirty-seven years.

XXI. ABDULAHI, SON OF MOHAMMA RIMFA.

A.H. 904–914. A.D. 1499–1509.

The twenty-first Sarki was Abdulahi. His mother's name was Auwa. Her influence was very strong among the rulers of the day. She built the house at Doseyi, hence its name, "Giddan Madaki Auwa." In his time Ahmedu, who was afterwards Liman of Kano, arrived. Abdulahi conquered Katsina. He advanced as far as Katsina itself and encamped on the river near Tsagero. He remained four months at Tsagero and then went to Zukzuk and made war there. After conquering the men of Zaria he went on to Kadaura and to Kalam and made war on the inhabitants, after which he returned to Kano. On his arrival home he found that Dagachi was preparing to revolt, and that the Madaki Auwa alone had prevented serious trouble, as her influence was very great in Kano. This was the reason that Sarkin Bornu came to attack Kano, and camped at Gunduawa. The Sarkin Kano went out to meet him together with his mallams and humbled himself before him. The Sarkin Bornu went back to his country. As soon as he was gone, Abdulahi beguiled Dagachi into submission and then turned him out of his office and gave his own slave the title. He ruled Kano ten years.

XXII. MOHAMMA KISOKI, SON OF ABDULAHI.

A.H. 914–972. A.D. 1509–1565.

The twenty-second Sarki was Mohamma Kisoki. He was the son of Abdulahi and Lamis, who built a house at Bani-Buki and established a market there, and was the mother of Dabkare Dan Iya. Kisoki put him in the "Kano

nine," and for that purpose expelled Berde. Kisoki was an energetic Sarki, warlike and masterful. He ruled over all Hausaland east and west, and south and north. He waged war on Birnin Unguru because of Agaidam. When he entered the town, Sarkin Kano took his seat beneath the "kuka" tree, at the Kofan Fada, and assembling the inhabitants of the town at the Kofan Bai, reduced them to terrified submission. He gave orders that no men were to be made prisoners, but that only clothes and horses were to be taken. Then he left Unguru and lived for a month in the bush. The Sarkin Bornu sent to him and said: "What do you mean by making war?" Kisoki replied: "I do not know, but the cause of war is the ordinance of Allah." The Sarkin Bornu said nothing more. The men of Kano returned to Kano. In the next year the Sarkin Bornu came to attack Kano, but could not take the town and returned home. Then Kisoki said to one of his men, Dunki, "Mount the wall, and sing a song in praise of the Sarki and his men of war." Dunki went. The song that he sung was this: "Kisoki, physic of Bornu, and the Chiratawa." He sung it again and again, and after that he praised all those who were present at the fight; as Galadima Bawa, Mai-Dawakin Maisanda, Mai-Dawakin Gawo Magani, Dan Kudu Dufi Koamna, Makama Abdulahi, Makama Atuman, Dan Yerima Gajeren Damisa, Dan Buram Sagagi, Umoru Dan Maji, Dan Makoiyo Jigu, Dan Goriba Jar Garma, Dan Darmenkorau and Gaji Dan Bauni and many others, about forty in all. Dunki sang their praises for forty days on the top of the wall. After these he celebrated anyone else he thought worthy, as Madaki Koremma, Dagachi, Alkali Musa Gero, Sarkin Kasua, Liman Kano, Sarkin Bai, Dan Maji, Sarkin Yara, the eunuchs and San Turaki. The Madaki Auwa, because she was grandmother of Abdulahi, was also celebrated, in a song beginning: "Mother! Kano is your country. Mother! Kano is your town. Old lady with the swaggering gait, old lady of royal blood, guarded by men-at-arms." Others there were too—thirty-four in all. In Kisoki's time Shehu Tunus, who brought *Eshifa* to Hausa, came to Kano. Dan-Goron-Duma also came, and Shehu Abdu Salam, who brought with him the books *Maḍawwanna*, *Jam 'as-saghir* and *Samarkandi*. In the next year Tubi came from Zukzuk to learn from Shehu Tunus and became his chief disciple in Kano. Shehu Tunus told Kisoki to build a Friday Mosque for the Rumawa. Kisoki built it. A certain mallam named Shehu Karaski, and Magumi and Kabi came from Bornu. They were brothers. Kisoki took a liking to Shehu Karaski and asked him to become Alkali. He refused, and suggested his brother Magumi. Magumi agreed, and built a portico at the Kofan Fada. In Kisoki's time, Zaite, Tamma, Buduru, and Koda came to Kano. Kisoki ruled the town with his mother Iya Lamis and his grandmother Madaki Auwa, and Guli, the brother of Madaki Auwa. Guli was much respected by the Sarki; he came to have power over the whole country This is the reason every counsellor is called Na-Guli. Kisoki ruled Kano fifty-eight years.

XXIII. YAKUFU, SON OF KISOKI.

A.H. 972–973. A.D. 1565.

The twenty-third Sarki was Yakufu. His mother's name was Tunus. He was Sarkin Kano four months and twenty days. Guli deposed him. The Galadiman Kano Sara Katunia and Guli carried on civil war. There was forty days' fighting in Kano before the Galadima overcame and killed Guli and determined to re-establish Yakufu on the throne. Yakufu refused, and returned among the learned men to study. So he went and lived in the country which bears the name of Yakufawa. He was the father of Mohamma Shashere, Dauda Abasama, Sarkin Taura, Buduru, Sarkin Majia, Sarkin Gilima, Sarkin Kazura and Sarkin Gwunaka.

XXIV. DAUDA ABASAMA, SON OF YAKUFU.

A.H. 973. A.D. 1565.

The twenty-fourth Sarki was Dauda Abasama. His mother's name was Zuhara. He ruled one month and twenty days before he was turned out. His brothers, Kazura, Majia, and his sister, Buduru, so called because she was unmarried, Gilima, Taura and Gwunka, the youngest, joined him in his exile at a place called Karmashe. Dauda settled there and a house was built for him. The brothers each chose a place to live.

XXV. ABUBAKR KADO, SON OF RIMFA.

A.H. 973–980. A.D. 1565–1573.

The twenty-fifth Sarki was Abubakr Kado, son of Rimfa and full brother of Abdulahi. His mother's name was Auwa. In his time the men of Katsina worsted the men of Kano until they came to the very gates of Kano.

They encamped at Salamta. The men of Kano went out to fight, but they were beaten and scattered, and had to take refuge in the town. Devastation went on, and the country was denuded of people. The only place where anybody was found was in walled towns or rocks, as Karayi, Gwan-gwam, Maska, Tariwa, or any other rocky place. Abubakr Kado did nothing but religious offices. He disdained the duties of Sarki. He and all his chiefs spent their time in prayer. In his time eunuchs and mallams became very numerous. Kano was filled with people. Mallam Sherif, Tamma, Gesu and Wuri came to Hausa from Lagoni. Some people say they came from Bagarmi.

Tamma was the greatest of them. When they first came they lived in Katsina land. For this reason the place where they lived is called Tamma. Afterwards they moved to Kano and settled at Godia. The town was called Godia after a certain woman, a harlot. She and the Sarki reigned jointly over the town. The Sarkin Godia said to Tamma, "Settle at Godia." So Tamma settled at Godia and married Godia. Abubakr was the first Sarki who read the book

called *Eshifa* at the house of Dan Goronduma Kursiya. He was the Sarki who made the princes learn the Koran. This he did because of his own sons. They read the Koran well, and the reading was in the middle of Shaaban. Every morning after sunrise the princes assembled. The Sarki came out after early morning prayer. He had seven sons, each of which read a seventh of the Koran. He gave his sons great wealth. The eldest of them was Abdulahi, otherwise called Dan Kado Kisoki; Chiroma Yan Sarki was another; then Dauda Tsaga, Dan Ashia (Ashia was the Sarki's sister), Dari, and Tella. The Sarki built Goron Pugachi for the reading of the Koran. He began reading *Jam 'as-saghir*. He ruled Kano seven years and six months and then was deposed.

XXVI. Mohamma Shashere, Son of Yakufu.

A.H. 980–990. A.D. 1573–1582.

The twenty-sixth Sarki was Mohamma Shashere, son of Yakufu. His mother's name was Fasuma. He was unmatched for generosity among the Sarkis of Kano. He was the first to give a eunuch the title of Wombai (the eunuch was called Damu). He also gave to a eunuch called Dabba the title of Sarkin Dawaki. He gave to another eunuch called Mabaiyi the title of Dagachi.

He determined on an expedition against Katsina. He said to the Alkali Mohamma the son of Tanko, the son of Jibril, the son of Mugumi: "Find me an Alkali to take with me to war with Katsina. When I go to the war, I shall not return alive unless I beat the Katsinawa." The Alkali gave him his pupil Musa, whose mother's name was Gero. The Sarki made Musa Alkali. Now when he came to Katsina, the men of Katsina came out to fight. The armies met at Kankia and fought there. The Katsinawa won because they were superior in numbers. The Kanawa ran away—deserting their Sarki—with the exception of San Turaki Mainya Narai, San Turaki Kuka Zuga and Dan Dumpki. Hence the songs "Narai the wall: ready to answer any challenge;" "Zuga does not run away."

These returned home together with their Sarki and entered Kano with him. The Sarki was very grieved. His men said to him, "Lay aside your grief, next year we will defeat the Katsinawa, if Allah wills." But meantime his brothers were treacherously planning to kill him. San Turaki Narai heard of their plans, and told the Sarki, saying, "Do not go outside your house, you or your Liman, to-day, or you will be killed." So the Sarki remained in his house, while San Turaki acted as Sarki. When the conspirators came in the evening, they found San Turaki with his slaves in the mosque, and, thinking he was the Sarki, attacked him. He had with him nine of his own slaves, and eighteen of the Sarki's household. The nine slaves were killed. Twelve of the others were killed and six captured. The names of the six were Burimah, Jigo, Adam, Wukarka, Tukuki and Sarkin Wawayi. The new Sarki Mohamma Zaki intended to kill these six, but they prayed and begged him saying: "Spare us and we will be your slaves, we

are your grandchildren." So the Sarki spared them, but each of them chose a task as a price of their lives.

San Turaki Narai was buried in the mosque[1] in which he was killed. For this reason Mohamma Zaki made Aderki build Serikin Jarmai a house inside the Sarki's compound. The "zowre" of Turaki Mainya was also built near the mosque, as also Yan Sintali's house and the houses of Turaki Kuka and Mai-Shikashikai. The site of the mosque was changed. On account of this occurrence Turaki Mainya had the honour of acting for the Sarki, if he were absent, in the time of Mohamma Zaki, but afterwards the right lapsed. Shashere ruled nine years and four months and twenty-four days. Then he was deposed.

XXVII. Mohamma Zaki, Son of Kisoki.

A.H. 990–1027. A.D. 1582–1618.

The twenty-seventh Sarki was Mohamma Zaki, son of Kisoki. The name of his mother was Hausatu, the daughter of Tamma. When Mohamma became Sarki, Tamma came to live at Kano together with his men, the Kartukawa. In the time of Mohamma Zaki "Tchukana" and "Dirki"[2] were begun. The Sarki's men kept saying to him, "Sarkin Kano, if you leave the Katsinawa alone, they will become masters of all Kano and you will have nothing to rule but a little." The Sarki said, "I will conquer the Katsinawa if Allah wills." At this time the Sarkin Kworarafa came to attack Kano. The people of Kano left the city and went to Daura, with the result that the Kworarafawa ate up the whole country and Kano became very weak. The men of Katsina kept on harrying Kano. If it had not been for the sake of the mallams in Kano, they would have entered and destroyed the city. There was a great famine which lasted eleven years. The Sarki called all his men and mallams together and said, "I have called you together to take counsel with me. How are we to stay this calamity?" Shehu Abubakr the Maghrebine said: "If you wish to repel the men of Katsina, I will give you something to do it with, but if you do repel them, you will never return to Kano." The Sarki said, "I agree." He gave Shehu great wealth and the mallams many gifts. Shehu did as he promised to do. The Sarki left Kano on the 22nd day of Ramadan, and arrived beneath the walls of Katsina at daybreak on the day of the Salla. The men of Katsina came out to battle before the hour

[1] The mosque was not rebuilt till the time of Abdulahi Dan Dabo, a Fulani. The Turaki Mainya did not again have such prestige till the time of Mohammed Belo, who made his son Zacchari Turaki Mainya. History repeats itself.

[2] That is to say, the Koran covered with goat's skin. Afterwards cow hide was used for the purpose, as many as ten skins being used, and even forty in later times. In Alwali's time, the practice had gone to such a ridiculous length that he stopped it altogether. The people said, "If you stop this practice, God will bring evil fortune upon you." Alwali replied, "Dirki is nothing but the Koran: I swear I will open it and expose its contents." So he ordered young men to take axes and open "Dirki." They did so. Alwali found the Koran inside, and took it to his house. The people said, "You will be expelled from this land even as you have expelled the Koran from Dirki." Alwali was afterwards driven out of Kano.

of the feast. The battle took place at Guraji. The men of Kano defeated the men of Katsina. The men of Katsina dispersed and fled, and the Kanawa took much spoil. They took four hundred horses, and sixty suits of horse armour. No one knows the amount of the spoil or the number of the slain. The Sarki returned to Karayi, where he died. His captains in war were eight in number: Madawaki Shaduka, Makama Babba, Jarumai Kaiotau, Atuman, Yanka Shaida, Burdi Hako, Dawaki Marku and Butali. He ruled Kano thirty-seven years and five months.

XXVIII. Mohamma Nazaki, Son of Zaki.

A.H. 1027–1032. A.D. 1618–1623.

The twenty-eighth Sarki was Mohamma Nazaki. His mother's name was Kursu. When he became Sarki he sent messengers to make peace with Katsina. Sarkin Katsina refused his terms and invaded Kano. The Kanawa came out, and a battle took place at Karayi, in which the Kanawa defeated the Katsinawa. They then returned to Kano. Next year the Sarkin Kano went to Kalam. He left the Wombai Giwa behind at Kano because he was sick. When the Wombai recovered he said, "What can I do to please the Sarki?" His men said, "Add to the city." He said, "Very well." So he built a wall from the Kofan Dogo to the Kofan Gadonkaia, and from the Kofan Dakawuyia to the Kofan Kabuga, and to the Kofan Kansakali. He spent an enormous amount of money on this improvement. Every morning he brought a thousand calabashes of food and fifty oxen for the workmen till the work was finished. Every man in Kano went to work. No man surpassed the Wombai in benevolence to Moslems and the poor. The day when the work was to be finished the Wombai Giwa distributed among the workmen a thousand "tobes." He slaughtered three hundred cows at the Kofan Kansakali and gave the mallams many presents. When the Sarkin Kano returned from war, the Wombai gave him a hundred riding horses. Each horse had a mail coat. The Sarki was very pleased. He said, "What shall I do for this man, to make his heart glad?" His men said, "Give him a town." So the Sarki gave him Karayi. Hence the song:

> "Elephant Lord of the town, Abdullah foe of the bull hippopotamus, whose chains for taking captive women are hoes and axes."

The Wombai left Kano and went to Karayi. Every day he fought the Katsinawa and took much spoil from them in war. He became master of a hundred mailed horsemen and a thousand horses. He was sung as "The elephant who reduces his neighbours to servitude." He became so mighty that it was feared he would revolt. Hence he was turned out of his office in the time of Kutumbi. Mohamma Nazaki ruled Kano five years and one month.

XXIX. Kutumbi, Son of Mohamma Nazaki.

A.H. 1032–1058. A.D. 1623–1648.

The twenty-ninth Sarki was Kutumbi, the son of Mohamma Nazaki, otherwise called Mohamma Alwali. His mother's name was Dada. He was a great Sarki. He had a friend whose name was Kalina Atuman, to whom he entrusted great power. No one would believe the extent of his power except one who saw it. He ruled over Kano town and country until his power equalled that of the Sarki, while the Sarki was like his Wazir. This Kalina Atuman was in power for twelve years. Then he died. After his death one of his men, Dawaki Kwoshi, came to the front. He too became so powerful that he seemed likely to revolt. He went to a place called Bakin Karre and was there for seven days. After this he went to Yankwosa, where he remained three days, and afterwards to Rimin Kwoshe, the Sarki's farm. All the chief men of the town flocked to his standard. He had been there nine days when the Sarki induced him to come back with fine words. Then he returned to Kano. He was celebrated in the song:

> "See your prophet, ye Princes! You looked for a black dog, and did not find it at the hearth stones. Dawaki can put to flight a host with a shield of lotus. Dawaki the son of the great Dayi, the boaster."

Dawaki was the son of Turaki Kuka Allandayi. Thus it is that if the Sarki is sung, no one may be mentioned but him.

During the time of Kutumbi the saying,

> "O God great and loving! The great man hath the spleen,"

originated, because of Allandayi's anger when the Ungwa Kofan Kabagga was taken from him. No man of that time in Kano had accumulated such vast wealth, and so many eunuchs and ornaments. Hence he was sung in the song, "Great God, light of the town, O star!"

Kutumbi was the father of Bako. No prince could compare with him. In everything, in doing good, or doing ill, in courage, anger, and generosity he was like a Sarki even while he was only a prince. He had six hundred horses and ninety mailed horsemen. He went to Kurmin Dan Ranko to war and took much spoil. When he returned to Kano he was given the title of Jarumai for this exploit. Afterwards he prayed to die and died, for fear of civil war after his father's death. In the time of Kutumbi, Sarkin Dawaki Magara went to war with Bauchi and on his return built a town at Ganjua and settled there. He sent to Kano two thousand slaves. Kutumbi was very angry about this. Next year he mounted his horse and went off to war there. The people paid him *Jizia*. Then he returned to Kano leaving there five hundred slaves. The place was called Ibdabu since the people were all the slaves of the Sarki. The next year Kutumbi went to war with Katsina. He was victorious, and took much spoil. He camped at Dugazawa for nine months, during which time no one could venture out of Katsina. From this siege comes the song: "Alwali shutter of the great gate, Kimbirmi, shutter of the great gate." Of Kutumbi's warriors the greatest

was Madawaki Kimbirni. Then came Makama Banki, Dan Maji Jartake, Jarmai Garaje, Berdi Kamoku, Goriba Babba, Dan Kanfache Zabarau, Dan Ataman Babakke, Gwoto, Kaderko, Dawaki Sun Kuche and Dan Makŏo Makere (so called because he always fought with a *kere*). There were others beside, and they feared nothing but God. Kutumbi returned to Kano, and the next year went to fight with Gwombe, which he sacked. He was the first Sarki of Kano who collected the *Jizia* from the Fulani which is called *Jangali*. He collected a hundred cows from the Jafunawa, the chief clan of Fulani, seventy from the Baawa, sixty from Dindi Maji, fifty from the Danneji, and others too numerous to mention. When he had collected the cattle he said to his slave Ibo, "I make you Sarkin Shanu." Hence the latter was called "Ibo na Kutumbi." He said to Mandawali, "You are Sarkin Samri, because you have charge of all the youths among my slaves." He called the slaves Kirdua. He said to Gumki, "I make you Sarkin Dogare." He said to Buayi, "You are Sarkin Shamaki." This man was called Buayi because he was a "black sheep." His name was Agurmaji. Kutumbi turned the Sarkin Surdi out of his house, and told him he had appointed another to his office. Sarkin Surdi built a house for himself. Whenever Kutumbi went to war or to Salla, he was followed by a hundred spare horses. Forty drums were in front of him, and twenty-five trumpets, and fifty kettle-drums. He was the first Sarki to create a "Berde Kererria." He was always followed by a hundred eunuchs who were handsomely dressed and had gold and silver ornaments. He built a house at Gandu, and another at Tokarawa. In the latter he lived when he went to war, and waited there until his army had assembled before setting out. When he returned from war he encamped at Gandu, where he would spend the night. Kutumbi was a very mighty Sarki in Hausaland. He went to war with Katsina and encamped close to the western gate of the city.

The Katsinawa came out in the night and a battle took place before daybreak. The Katsina army surprised the Kanawa; the whole of the Kanawa ran away. A man called Kumaza poised his spear and smote at Kutumbi, but Dan Maji Zartaki rushed in and killed him. Hence the song, "Rafter of iron, stronger than 'seri' wood." Sarkin Kano mounted his horse and retreated together with the few men who were with him. The men of Katsina pursued the retreating Kanawa and harried them until they reached Yashi. As regards Sarkin Kano some people say he was killed in Katsina, others say that he died at Kano. The latter is the better account. In any case he died within three days of the battle. He ruled Kano twenty-six years.

XXX. Al Haji, Son of Kutumbi.

A.H. 1058–1059. A.D. 1648–1649.

The thirtieth Sarki was Alhaji Dan Kutumbi. His mother's name was Fadima. He ruled Kano eight months and twenty-four days, then he was deposed—the reason, I do not remember. He went into the country to live at a place called Dan Zaki.

XXXI. SHEKKARAU, SON OF AL HAJI.

A.H. 1059–1061. A.D. 1649–1651.

The thirty-first Sarki was Shekkarau, the son of Alhaji and Fari. In his time peace was made between Kano and Katsina. The peacemakers were Shehu Ataman, Mallam Bawa and Liman Yandoiya. Shehu Ataman said: "In future, whoever is the aggressor between you shall never prevail, if Allah wills, till the day of Judgment." About this time Dan Tamma Maji went out with Sarkin Gesu Sulimanu to Godia. Shekkaro ruled one year and seven months and twenty-four days.

XXXII. KUKUNA, SON OF AL HAJI.

A.H. 1061–1062. A.D. 1651–1652.

The thirty-second Sarki was Mohamma Kukuna. His mother's name was Goro. After he became Sarki he ruled one year. The Madawaki Kuma turned him out, and gave the power to his sister Fasuma's son Soyaki.

XXXIII. SOYAKI, SON OF SHEKKARAU.

A.H. 1062. A.D. 1652.

Soyaki was the thirty-fourth Sarki. His mother was Fasuma. Kukuna fled to Zukzuk. Soyaki had been reigning three months when the chiefs of Kano met together and held a consultation about him. The chief of them were the Galadima Wari, the grandfather of Kofakani Dan Iya Babba, Makama Mukhtari and Sarkin Dawaki Gogori. They sent messengers secretly to Mohamma Kukuna, who at once set out for Gaiya. The Sarkin Gaiya joined him in his march to Kano. The Madawakin Kano heard of this, assembled the men of Kano, and told them the news. They said, "We hear." He said, "What do you propose?" They said, "Shall we not go out before they get close to the city." The Madawaki said, "Very well." A battle took place at Hotoro. The Kano men ran away and deserted the Madawaki Kuma. Kukuna attacked him with a spear. He feared to be killed, and tried to escape. Kukuna followed him. The Madawaki made for the Kofan Kawayi and shouted to the people to close the gate behind him, so that Mohamma Kukuna should not enter. Kukuna, however, got in before the gate was shut and reached the palace. He found the Sarki Soyaki at the Giddan Ma-Shikashikai, together with his eunuchs. So he seized the sword from the hand of Soyaki and cried, "Allahu, Akbar, You, Sarki of a day! Go out! If you do not go I will cut your head off." The Sarki went out. A house was built for him at Dukarawa, where he lived and died.

XXXIV. Mohamma Kukuna (restored).

A.H. 1062–1070. A.D. 1652–1660.

Mohamma Kukuna then entered the Giddan Rumfa and lived sixty days there. After this he arrested the Madawakin Kano. Then he assembled many maidens, put the Madawaki on a donkey, and handed it over to the maidens to drive round the town. They did as he commanded. The Madawaki died of chagrin. Kukuna drove away Fasuma, the wife of Shekkarau and mother of Soyaki, because of the grudge he bore her son. She built a house at Durumin Yer Madawaki. Next year Sarkin Kworarafa Adashu came to attack Kano. Sarki Kano went to Yan Magada, where he stayed seven days, and then to Auyo and Abewa, where he remained forty days. On his return to Kano he found that the Kworarafa had battered down the Kofan Kawayi. He waited seven days, then marched round the city on a Saturday, entered his house, and stayed there two days. On a Monday he went to the Kofan Kawayi and built it up. From the first of these episodes he was called "Gewayer Garu," from the second "Na chin Kassa." On the same Monday he called all the Marguzawa to the city to salute him. They remained twenty-one days, and played a game in which they beat each other's heads with iron. The Sarki gave them many gifts, and asked them who was their chief. On their saying it was Zanku, the Sarki said to him, "Next year come again, and let all your men come with their 'hauyias' on their shoulders." "If you do so, Zanku," said Kukana, "God willing, no Sarkin Kano will be driven out again." Afterwards he sent for the Liman Yandoiya, and after giving him many presents said, "I want you to give me a charm which will prevent any Sarki from being again driven out of Kano." The Liman said, "Very well, but you must increase your presents." Kukuna did so, and gave him silver and gold. The Liman gave him what he gave him. The Liman told Kukuna to bury one charm in the Turaki Mainya's house, another in the house of Turakin Kuka, and another in the "Treasury" of Kano; and he further added that a fire must be kept burning every day above the charms, and assured the Sarki that if his instructions were carried out no Sarki would ever be again deposed. Kukuna did so, and ruled eight years and seven months in addition to the year that is mentioned above. Then he was deposed.

XXXV. Bawa, Son of Mohamma Kukuna.

A.H. 1070–1081. A.D. 1660–1670.

The thirty-fifth Sarki was Bawa. His mother's name was Lamis. He was a learned, just, and good Sarki. In his time there was no war in Kano land, east and west, south and north. Goron Pugachi, which Abubakr Kado, the son of Mohamma Rimfa, had built for his sons, had fallen into ruins, so Bawa repaired it. Bawa fashioned the chair which is placed in the house of the great Turaki, that he might sit on it. He built Pugachin Kishi as a school. He had a friend

who was called Dan Mallam Ali Diko. This Diko received such honour that a house for him was built in the palace called Soron Diko—in such honour was he held. He and the Sarki were inseparable. They rode together even at the Salla or elsewhere, since they had been the closest of friends from the time before Bawa had become Sarki. They had studied together. Diko always said his morning prayers at the Sarki's house, and never returned home until after the evening prayer. In Bawa's time Abdulahi, a great student of the Koran, came to Kano with his friends. He had a wonderfully captivating voice when reading. He took a house near Diko's and preached after evening prayer. Diko asked, "Who is that man?" and was told it was Abdulahi, a stranger. The next morning Diko sent to Abdulahi, and when he came, took him to the Sarki and told him to read to the Sarki. So he read the appointed portion of the Koran. After the Sarki had listened he would not let him go away, but built him a house near to the gate of Turaki Mainya. He was wont to amuse the Sarki at night by reading. During Ramadan Abdulahi preached to the Sarki during the vigils. When Dan Lowan died the Sarki said to Abdulahi, "I make you Dan Lowan, and you will call to prayer." In Bawa's time there were many holy men. He ruled Kano ten years, four months and twenty days.

XXXVI. Dadi, Son of Bawa.

A.H. 1081–1114. A.D. 1670–1703.

The thirty-sixth Sarki was Dadi. His mother's name was Ka Iya Gari. He wished to enlarge the city of Kano, but Shehu Mohamma prevented him. The next year Sarkin Kworarafa came to fight with Kano. The Sarki wished to go out and fight him outside, but the chiefs of Kano demurred and he remained in his house. The Kworarafai entered Kano by the Kofan Gadon Ḳaia, slaughtered the men of Kano, and reached Baḳinrua. The Galadima Kofakani said to the Sarkin Kano, who was in the Pugachin Kishi with his Jarumai: "Establish 'Tchibiri' at Toji, and 'Bundu' at Rimi Bundu." The Galadima said to the Sarki, "Rise up! The Kworarafai have destroyed the best part of your town and have killed many men! They have penetrated to the Kurmi, and will attack the 'palace.'" The Sarki mounted his horse and went out, and came to the Kofan Fada with the Galadima and eunuchs and Jarumai. There he met all the Kanawa. He went to Rimin Bundu, took the "Bundu" and gave it to Dan Durma Mazza Mazza, and thence hastened to Kofa Bai. He found the Kworarafa had come near the "Tchibiri," but everyone of them who came close died at once. The Sarkin Kworarafa told his people to take away the "Tchibiri." The Kworarafai tried to charge, but they failed to seize it. The Sarki Kano came to the "Tchibiri," and took it. On his right hand he had a hundred warriors, in front of him ninety-nine chiefs, all of them mallams, and on his left hand a hundred warriors. They were all slaughtered by the Kworarafai; only a few were left alive. Sarkin Kano fled to Daura. The Kworarafai followed him to Jelli and then returned. Of the

men who were killed in this battle the chief were Dan Janbori, Dan Barra, Sarkin Buzza, Sarkin Durra, Dan Tanadi, Bundu, Sarkin Zabro, Magagi Bugaji, Sarkin Marua, Dan Garadu, Dan Raguma Giwa, Magaji Butachi, Dan Koamna, Magagi Sheggi, Dan Gamaji, Magaji Gantururu, Dan Dagazo, Magagi Tuntu, Sarkin Maguri, Dan Gauji, Magagi Garogi, Dan Tankaro, Dan Kargagi, Magaji Karfassa, Dan Kutuntu, Dan Toro, Dan Zaki Mazawa, Dan Bambawri, Kioto and others—in all ninety-seven Sarkis. In the time of Dadi the Sarkin Gaiya revolted. His name was Farin Dussi, the father of Mariamma. He was three years without paying the Sarkin Kano *Jizia*. Then the Sarkin Kano enticed him to an interview and killed him, some say with a razor, some at "Baura." In consequence of this revolt Sarkin Dawaki Debba (called Kamna) went out and became Sarkin Aujera. The Sarki said to him, "I am making you Sarkin Aujera because I am afraid of Miga, Dussi and Gaiya revolting." Dadi ruled Kano thirty-three years and eight months.

XXXVII. Mohamma Sharefa, Son of Dadi.

A.H. 1114–1143. A.D. 1703–1731.

The thirty-seventh Sarki was Mohamma Sharefa, son of Dadi. His mother's name was Mariamma. She was the daughter of Sarkin Gaiya Farin-Dussi. In Sharefa's time, the men of Gaiya became very influential in Kano. Sharefa was a powerful Sarki. He introduced seven practices in Kano all of which were robbery, namely, Karo, Rinsua, Matafada, Yan Dawaki, Kuaru, Jizia of maidens on marriage, and Jizian Kasua Kurmi. He invented many other methods of extortion. Sharefa sent Wombai Debba to war. The Wombai left Kano for Kirru, and making war on it captured much spoil and many men. News came to Sharefa that the Wombai had sacked Kirru and that there was nothing in the town but ashes. Sharefa said nothing, but when the Wombai Debba returned to Kano asked him what he meant by such work. The Wombai said, "I like Kano," speaking in riddles. In Sharefa's time the Sarkin Jamfara, Yakubu Dan Mazura, came to make war on Kano. A battle was fought at Yergana in which the men of Jamfara defeated the men of Kano. The men of Kano fled and deserted the Sarki, who was left with Nasan Kanni, Kasheka Bugau, the Turaki Mainya Allah Nikimaiyi, Berdi Kereria Yashibka and Dogara Gateri. They all lost their heads. Sharefa said to them, "Does not a single one of you know the way back to Kano?" They said, "No." Nasan Kanni said, "I know the way to the city." The Sarki said to him, "Show me the road." So he showed the Sarki the road until they came to the Rimin Bugunsua. The Sarki entered the town and his house, and no one was allowed to see him, so great was his wrath. Nasan Kanni Bugau, Allah Nikimaiyi and Yashibka obtained great honour from the Sarki because of the fight at Yergana. After this the Sarki sent out Sarkin Gaiya Jan Hazo, and told him to put a wall round Gaiya. Walls were built, too, at Tarkai, Tsokkua, Gano, Dawaki and many other towns. When Bugau became Turaki

Kuka he sent messengers to Sarkin Yawuri to ask him for "Algaitas." The Sarkin Yawuri gave him ten Algaitas, and three "Kurra-Kurra." The messenger came with them to Turaki Bugau. Bugau kept them three months, and sent them to the Maidaki Mariamma, since she was a great personage. There was no woman like her in the seven Hausa states. In Sharefa's time cowries first came to Hausaland. The Sarki was a mighty warrior. Among his captains were Sarkin Dawaki Sodi, Dan Iya Maji Kudu, Dan Iya Mallam Shadu, Sarkin Jarumai, Mallam Bawa, Sarkin Jarumai Akwuria, Dan Iya Dashina, Sarkin Jarumai Ibrahim, Limanin Beradai Dodo, Berde Ba Kuddu, Sarkin Jarumai Abdullah, Galadima Kofa-Kanni. These all fought under Dadi. There were also Maidawaki Magani, Dan Sudu Durraman, Ali Uban Dan Kurkuti, Yahaya Uban Dan Maji Babba, Sarkin Damargu Gabo, Sarkin Fulani Bebeji Abdua, Sarkin Fulani Dania, Sarkin Fulani Bugai Beriss, Sarkin Gaiya Alwali, Sarkin Fulani Sankara Dubai, Berde Alhaji, Madawakin Gawo Bajiddah and others. When they went to war they never ran away, but always were victorious, even though the Sarki were not present. Sharefa ruled Kano twenty-eight years and ten months.

XXXVIII. Kumbari, Son of Sharefa.

A.H. 1143–1156. A.D. 1731–1743.

The thirty-eighth Sarki was Mohamma Kumbari, the son of Sharefa and Duki. He was a liberal Sarki but quick to anger. His counsellors liked him, but the common people hated him. In his time there was fierce war between Kano and Gobir.

The name of Sarkin Gobir was Sobah. If the Gobirawa defeated the Kanawa one day, the Kanawa defeated them the next. This state of affairs continued for a long time. In Kumbari's time Sarkin Bornu May-Ali came to Kano to war. He encamped at Faggi for three nights without a battle being fought, since Shehu Tahiru and Shehu Bunduu prevented it. He returned to Bornu. Kumbari went to war with Dussi in the time of Sarkin Dussi Makuri and very nearly entered the town through the fierceness of his attack, but his advisers prevented him entering the town, saying to him, "Sarkin Kano, you have won the day, go home." He listened to their advice and went home. In the Dussi war Sarkin Aujera Bugau was killed. Kumbari returned to Kano. In his time shields were first brought from Nupe, which was then ruled over by Sarkin Nupe Jibrila. Guns were also brought. Mohamma Kumbari was active in collecting *Jizia* from the Kasua Kurmi, so that the market was nearly killed. The next year he collected *Jizia* in Kano and made even the mallams pay. There was so much disturbance that the Arabs left the town and went back to Katsina, and most of the poorer people in the town fled to the country.

Turaki Kuka Tunku said to Kumbari, "Sarki, if you do not let this *Jizia* alone, there will be no one left in the town but yourself and your servants." The Sarki listened to him. Kumbari made war against Kuddu Baudam. When he

went out to Zanga he was advised to make haste, for it was said, "If you do not make haste you will not conquer Baudam, because there are many warriors in the town." He said, "I hear." When he came near the gate of the town, an arrow was launched at him and a battle ensued between the Kanawa and Kudawa. When Kumbari saw that the battle was growing hot, he took a spear in his hand and attacked the wall of the town. The men of Kano followed him under a shower of arrows. The Kudawa slaughtered the Kanawa, and the Kanawa slaughtered the Kudawa, until Kumbari reached the gate of the town. Had not the gate been closed he would have got in. The Kudawa ran away in a body to their houses. Kumbari camped at Zongon Dan Ingarma. Afterwards terms of peace were arranged and Kumbari returned to Kano. His captains were fifty-two men who knew no fear: Sarkin Jarumai Aidajika, Berde Duguru, Dan Iya Tefiwa, Dan Iya Gajigi, Sarkin Majia Dandawa, Dan Tama Dan Arkaya, the Maji Yakufawa called Kunkuru Dageza, Dan Berde Madawaki Yabo, Galadima Dan Faramu, Sarkin Dawaki Mallam Bawa, Berde Sokana, Sarkin Jarumai Akallam, Jarmai Tugwai, Dan Hamuda, Dan Tankari Hamadi, Dan Tara-Tara Abbas, Sarkin Gano Bako, Dandama Kanwa Chilaya, Makama Chikudu, Lifidi Sayadu, Dan Maskara, Maidawaki Berde Dan Ashifu, Sarkin Damargu Baji Dan Gaba, Sarkin Bebeji Zakkari, Dan Bugai Chusa, Dan Beras, Sarkin Ringim Ada, Al-Berka, Sarkin Tsekkia Atoro, Dan Farzaki, Sarkin Burku Muni, Dan Samayila Chikewa, Jarumai Raädu, Gashin Baki Tsofo, Makarma Della, Dan Ajibiji Kakwoshi Magani, Dan Shanono, Dan Ali Duka, and others. Each one of them had no fear in fight, but Kumbari thought there was no one equal to himself. He ruled thirteen years.

XXXIX. Alhaji Kabe, son of Kumbari.

A.H. 1156–1166. A.D. 1743–1753.

The thirty-ninth Sarki was Alhaji Kabe. His mother's name was Zama. She was also called Zenabu. He was a Sarki of many wars and terrible. From the time he obtained the kingdom he did not remain five months in his house without going to war or sending out his Sarkis to fight. Sarkin Gobir sent to try and make peace with him but Kabe refused. He sent to Sarkin Gobir Barbari, saying, "I have a cap to fit anyone's head." Barbari said, "I hear." The next year Barbari came to Kano to war. A battle ensued between him and Kabe at Dami. The Kanawa ran away, because of the "magic" which Barbari possessed. The Kanawa left Kabe alone with the Dogarai and Kwinkele, and Sarkin Dawaki Kinku Ammi and Turaki Kuka Yadoka. The whole army of the Gobirawa came charging up to the Sarkin Kano. The Kwinkele withstood them until their chief was killed. Then Yakidoka said, "Sarkin Kano, all the men of Kano have run away and left you alone with your slaves." Sarkin Kano returned to the town together with his slaves (some say with the Kanawa) sick at heart. The Gobirawa went on slaughtering the Kanawa, and the Kanawa slaughtered the Gobirawa in

frequent wars until Kabe's death. No record can be kept of the fighting between them in Kabe's time or the number of wars in which Kabe engaged or which he ordered. No one gave presents to the mallams so much as Kabe did, for he sought a reward in the next world. There was no man of his age who was so ruthless in killing men as Kabe. There was no peace in Kano, only trouble after trouble what with the war with Gobir and other wars. Sarikin Dawaki Ali, Jarumai Tugwai Dan Bajidda, Sarkin Jarumai Salihu, Lifidi Abubakr, Berdi Bakana, Makama Bagwinki, Lifidi Sawani, Ganda Faria, Magajin Kan-Kama, Doro, Lifidi Jedi Kwoma, Makama Almajir, Galadima Guraguri, Galadima Jarmawa Ali, Berde-Kunda, Burde Bakudu, Sarkin Damargu Buzu Dan Barji, Sarkin Ringim Kwirudu, Burdi Shahu, and others, were Kumbari's warriors, and fought for Kabe. Kabe ruled nine years and seven months.

XL. YAJI, SON OF DADI.

A.H. 1166–1182. A.D. 1753–1768.

The fortieth Sarki was Mohamma Yaji, son of Dadi. His mother's name was Mariamma. He was a just and good Sarki, and a man of mild disposition. On account of this his wives called him "Mallam Lafia." In his time there was no trouble.

He ruled in harmony with his brothers, the sons of Bauwo. There was no difficulty either with his Sarkis or his chief slaves, or his household, or any one. Many men came and settled in Kano-land in his reign. He reigned fifteen years and ten months.

XLI. BABBA ZAKI, SON OF YAJI.

A.H. 1182–1190. A.D. 1768–1776.

The forty-first Sarki was the son of Yaji, called Babba Zaki. His mother's name was Yerduna. He was an able Sarki, of great strength, renowned for his memory and eloquence. He was called Babba Zaki. He made war on Birnin Auyau in the time of Sarki Abubakr. If it had not been for Madawaki Kano Dandawa, Sarkin Gaiya Gajigi and Sarkin Jafun Furtumi, the Kanawa would have entered the city of Auyau and destroyed the town. Yaji built a house at Takai and almost lived there, but the court refused to live there. He made war on Burumburum, and took the town by assault, capturing many of the inhabitants and cutting the throats of some, whilst the others fled. He curbed the power of the Sarkis and head slaves and plundered them every day. He forced them to give presents under compulsion, and to go to war unwillingly. Hence he was called "Jan Rano, well named the disturber of elephants." In war he forced them to fight against their judgment. He was the first Sarki who had a guard of musketeers at Kano, a practice which has obtained ever since. He imitated the Arabs of Kano in almost everything. His war captains were five:—Sarkin

Sankara Nagerki, Sarkin Bebeji Dembo, Sarkin Majia Kimfirmi Makama Bobawa, Sarkin Jarumai Achukur, Sarkin Dawaki Maina. The great men in his time were forty-two:—Dawaki Tokara, Bawa, Madawaki Dundurusu, Lifidi Gabjin, Galadiman Shamaki Alwali, Tunku, Yakufu, Berka Wuta, Bagarami, Berka. These were all slaves. Among the mallams were: Alkali Abbas, Alkali Makam, Limanin Kano Aburauf and his sons, Abubukr Dan Mallam Bohari from Yandoto, and Husaini from Tarkai. The great men among the Arabs were: Sherif Hassan, Hajariki, Sherif Hamad, Sherif Dahab, and others. Among the Sarki's sons were: Dan Iya, Mallam Osuman, Choka, Daka and Nafata. Among his eunuchs were: Sarkin Dawaki Muradi, Turaki Mainya Munaga Allah, Turaki Kuka Kasan Allah, Turaki Kuka Ka-nem-Kiwo, Gwoninka Jephar, who was of the same people as Sherif Hassan and others. The chief of these were Dan Maji Babba, Hangaza and Dan Zanko Jibril. In all there were forty-two.

Each of them thought he was greater than the rest in the Sarki's eyes. Thus the Sarki planned. Babban Zaki ruled Kano eight years.

XLII. Dauda Abasama, Son of Yaji.

A.H. 1190–1195. A.D. 1776–1781.

The forty-second Sarki was Dauda Abasama, the son of Yaji. His mother's name was Baiwa. He was a Sarki of good character, reticent and wise, generous and popular. He was prudent and at the same time warlike, and kept his word. He had a mind above favouritism or revenge, and took the Galadima Makama's advice in everything. The Galadima Makama was like a Sarki, while Dauda was like his Wazir, because he was so forbearing. There was no war in his reign or rebellion. He ruled Kano five years and four months.

XLIII. Mohamma Alwali, Son of Yaji.

A.H. 1195–1222. A.D. 1781–1807.

The forty-third Sarki was Mohamma Alwali, son of Yaji. His mother's name was Baiwa. As soon as he became Sarki he collected stores of "Gero" and "Dawa" in case of war and famine. Nevertheless famine overtook him. His chiefs said to him, "Sarkin Kano, why do you refuse to give cattle to Dirki?" The Sarki said, "I cannot give you forty cattle for Dirki." They said, "What prevents you? If any Sarkin Kano does not allow us cattle for Dirki, we fear that he will come to some ill." Alwali was very angry and sent young men to beat "Dirki" with axes until that which was inside the skins came out. They found a beautiful Koran inside Dirki. Alwali said, "Is this Dirki?" They said, "Who does not know Dirki? Behold here is Dirki." Dirki is nothing but the Koran. In Alwali's time the Fulani conquered the seven Hausa States on the plea of reviving the Muhammadan religion. The Fulani attacked Alwali and drove him from Kano, whence he fled to Zaria. The men of Zaria said, "Why have you left

Kano?" He said, "The same cause which drove me out of Kano will probably drive you out of Zaria." He said, "I saw the truth with my eyes, I left because I was afraid of my life, not to save my wives and property." The men of Zaria drove him out with curses. So he fled to Rano, but the Fulani followed him to Burum-Burum and killed him there. He ruled Kano twenty-seven years, three of which were spent in fighting the Fulani.

XLIV. SULIMANU, SON OF ABAHAMA.

A.H. 1222–1235. A.D. 1807–1819.

The forty-fourth Sarki was Sulimanu, son of Abahama, a Fulani. His mother's name was Adama Modi. When he became Sarkin Kano, the Fulani prevented him from entering the palace. He went into the house of Sarkin Dawaki's mother. One of the remaining Kanawa said to Sulimanu, "If you do not enter the Giddan Rimfa, you will not really be the Sarki of city and country." When Sulimanu heard this he called the chief Fulani, but they refused to answer his summons, and said, "We will not come to you. You must come to us, though you be the Sarki. If you will come to Mallam Jibbrim's house we will assemble there." Sulimanu went to Jibbrim's house and called them there. When they had assembled, he asked them and said, "Why do you prevent me entering the Giddan Rimfa?" Mallam Jibbrim said, "If we enter the Habe's houses and we beget children, they will be like these Habes and do like them." Sulimanu said nothing but set off to Shehu-Osuman Dan Hodio asking to be allowed to enter the Giddan Rimfa. Shehu Dan Hodio gave him a sword and a knife,[1] and gave him leave to enter the Giddan Rimfa, telling him to kill all who opposed him. He entered the house, and lived there. All the Kano towns submitted to him, except Faggam, which he attacked. He took many spoils there. On his way back to Kano the chiefs of the Fulani said to him, "If you leave Faggam alone, it will revolt." So he divided it into two, and returned home. In his time Dabo Dan Bazzo raised a revolt. He dared to look for a wife in Sokoto and was given one. Sarkin Kano said, "What do you mean by looking for a wife at Sokoto?" So Dabo was caught and bound. His relations the Danbazzawa, however, came by night and cut his bonds, and set him free. He ran to Sokoto with Sulimanu following him. At Sokoto they both went before Dan Hodio. Dabo Dan Bazzo said, "I do not wish to marry your daughters, but I wish for a reconciliation between myself and your Sarki Sulimanu." So a reconciliation was made and they returned to Kano. Sulimanu sent the Galadima Ibrahima to Zaria to make war. Ibrahima conquered Zaria and took many spoils. He returned to Kano. Sulimanu was angry because of the Galadima's success, and had sinister designs against him when he died himself without having an opportunity of carrying them out. He ruled thirteen years.

[1] A flag was also given him as well as a knife and sword. He did not go to Sokoto, but sent a message. Had he gone himself, he would never have regained his position.

XLV. Ibrahim Dabo, Son of Mohammadu.

A.H. 1235–1262. A.D. 1819–1246.

The forty-fifth Sarki was the pious and learned Ibrahim Dabo, son of Mohammadu, protector of the orphan and the poor, a mighty conqueror—a Fulani

His mother's name was Halimatu. When he became Sarki he entered the Giddan Rimfa. Dabo made Sani Galadima. He, however, immediately tried to raise a revolt and incite all the towns to disaffection. The country Sarkis assembled and became "Tawayi," from Ngogu to Damberta, from Jirima to Sankara, and from Dussi to Birnin Kudu and Karayi. Dabo said, "I will conquer them, if Allah wills." He entered his house and remained there forty days praying to Allah for victory. Allah heard his prayers. He went out to hasten his preparations for war, and made a camp on Dalla Hill. Because of this he got the name of "The man who encamped on Dalla." He spent many days on Dalla,[1] and then returned home. He sent Sarkin Dawaki Manu Maituta to fight with Karayi. When the Sarkin Dawaki reached Karayi he sacked the town and returned to Dabo. Dabo said, "Praise be to God," and prepared himself to go out to war. He went to Jirima and sacked that town and afterwards sacked Gasokoli and Jijita. Hence he was known as "Dabo, the sacker of towns." After he returned home he kept on sending out men to raid towns. He went in person to attack Dan Tunku and found him at Yan Yahiya. They fought. The Yerimawa ran away, and deserted Dan Tunku, who fled to Damberta, and thence, with Dabo following him, to Kazauri. When the Sarki reached the Koremma in pursuit he stopped, turned round again, and went back to Damberta, where he wrecked Dan Tunku's house. Dabo then returned home. Dabo was celebrated in the song:—

> "The sacker of towns has come: Kano is your land, Bull Elephant, Dabo, sacker of towns."

When he went to war the trumpets played:—

> "The sacker of towns is mounting."

He made war on Birnin Sankara and Birnin Rano, took the town of Rano, and lived in the house of Sarkin Rano. After this exploit he shaved his head. He never shaved his head except he sacked a town. When the Kano towns saw that Dabo would not leave any town unconquered, they all submitted to him, and his power exceeded all other Sarkis. He had a friend whose name was Ango. When the Galadima Sani died, he made Ango Galadima, and as Galadima the latter reached great power through his pleasant manner and his persuasiveness. In Dabo's time there was no foreign war and people had food in plenty. Dabo conquered and spoiled Yasko. He had many war captains, a few among whom may be mentioned as: Berde, Kano Buggali, Sarkin Dawaki Manu, Sarkin Jarumai Dumma, Sulimanu Gerkwarn Karifi (he it was who killed Tunari, the son of Sarkin Sankara), Juli Kuda, Lifidi, Maidawakin Gawo and many others. These warriors of Dabo's time had no fear in war. When Dabo mounted to go to war no such dust was

[1] "Perhaps forty, I am not sure."

ever seen, so many were his horses. The dust was like the Harmattan. Dabo was called "Majeka Hazo." His was a wonderful and brilliant reign, but we will not say any more for fear of "Balazi."

He ruled Kano twenty-seven years and three months and nine days, his reign ending on the ninth of Safar.

XLVI. OSUMANU, SON OF DABO.

A.H. 1262–1272. A.D. 1846–1855.

The forty-sixth Sarki was Osumanu, son of Dabo. His mother was Shekara. The first act of his reign was to build a house for Shekara at Tafassa with a big room the like of which was never seen before. Shekara was called "the mistress of the big room." Osumanu was a learned and good man and generous. He was called "The skin of cold water." The Galadima Abdulahi obtained in his time almost as much power as the Sarki, while Osuman was like his Waziri. There was no war in his time except with Hadeijia. He built a house at Gogel and had a farm there. In his time mallams obtained great honour—among them Mallam Ba-Abseni, and others. In Osumanu's time Sarkin Dussi Bello revolted, but the Sarki enticed him to Kano and deposed him. Highway robbers were very numerous because Osuman was so good-tempered and merciful. He could not bring himself to cut a man's hand off nor, because he was so pitiful, could he cut a robber's throat. He was called "Jatau rabba kaya." There was no Sarki like him for generosity.

He ruled Kano nine years and ten months.

XLVII. ABDULAHI, SON OF DABO.

A.H. 1272–1300. A.D. 1855–1883.

The forty-seventh Sarki was Abdulahi, son of Dabo. His mother's name was Shekkara. When he became Sarki he set to work to kill all the robbers and cut off the hands of the thieves. He was called "Abdu Sarkin Yenka" because he was a strong-minded Sarki, ruthless, and victorious. He was quick to depose chiefs, but kept his word to his friends. He never stayed long in one place but went from town to town. In his time there was a very great famine, and the quarrel with Umbatu grew big from small beginnings. The Sarkin Kano was eager to make war upon Umbatu. His first move was to attack Kuluki. Dan Iya Lowal of Kano died at Kuluki, whereupon the Sarki returned home himself, but sent Abdulahi Sarkin Dawaki Dan Ladan and his son Tafida to war in Zaria country. They went to Zaria together. This was in the time of Sarkin Zaria Abdulahi Dan Hamada. When they returned from Zaria it was not long before Dan Boskori made a descent upon Gworzo. The Sarkin Kano sent Sarkin Dawaki on ahead and followed himself personally to meet Dan Boskori Sarkin Maradi, west of Gworzo. A battle took place. The Kanawa ran away, deserting the Sarkin Dawaki Dan Ladan. Dan Boskori killed him. The Kanawa returned home in ones and twos.

The Sarkin Kano was very angry. He gave orders that a house was to be built at Nassarawa for him to live in during the hot season; he also built a house at Tarkai for the war with Umbatu. He had a house at Keffin Bako where he lived almost two years because of Dan Maji the neighbour of Umbatu. He fought with Warji after the war with Kuluki, and took enormous spoil. No one knows the amount of the spoil that was taken at a town called Sir. The corpses of Warjawa, slaughtered round their camp, were about four hundred. The Sarki returned home. After a short time, the Sarki attacked Warji again, and once more took many spoils. Kano was filled with slaves. Abdulahi went to Sokoto, leaving his son Yusufu at Tarkai. While he was there Dan Maji came to attack Yusufu. A battle was fought at Dubaiya. The Kanawa fled and deserted Yusufu. Many men were slain and captured. After this Yusufu was made Galadima Kano, and hence acquired much power. Abdulahi sent him to Dal from Tarkai to capture Haruna, the son of Dan Maji. Yusufu met Haruna at Jambo, and a battle took place. The Umbatawa ran away, deserting Haruna. Yusufu killed and took many men. It is said that about seven hundred were killed. Afterwards Yusufu tried to stir up rebellion and was deprived of his office and had to remain in chagrin and poverty till he was penniless. Abdulahi turned the Sarkin Dawaki Abdu out of his office and with him Makama Gadodamasu, Chiroma Diko, Dan Iya Alabirra, Galadima Abdul-Kadiri, and Galadima Yusufu. Abdulahi killed the Alkali Kano Ahmedu Rufaiyi, and degraded Maäji Sulimanu, Maji Gajere, and San Kurmi Musa. He deprived Mallam Dogo of his office of Waziri. The number of people that he turned out of office was countless. Hence the song—

"Son of Ibrahim, a pick-axe to physic hard ground."

He sacked many towns. He made a new gate, the Kofan Fada. In his father's time it had been built up. He rebuilt the mosque and house of the Turaki Mainya early in his reign. They had been in ruins for many years. In his time Soron Giwa was built. At Woso he met Dan Maji in war. It was towards evening when the battle was fought. Dan Maji retreated. If it had not been that the light failed he would have been killed. Abdulahi attacked Betu, but failed. Abdulahi used to have guns fired off when he mounted his horse, till it became a custom. His chief men were:—Sarkin Yaki, called Mallam Dogo, Mallam Isiaka, Mallam Garuba, Sarkin Gaiya, Mallam Abdu Ba-Danneji, Alhaji Nufu, his friend Mallam Masu, Tefida his son, Shamaki Naamu, Manassara, Jekada of Gerko, and Dan Tabshi. Mallam Ibrahim was his scribe, and was made Galadima. This man was afterwards turned out of office in the time of Mohammed Belo. Others were the Alkali Zengi and Alkali Sulimanu. Abdulahi went to Zaria and sat down at Afira, and then at Zungonaiya. The Madawaki Ali of Zaria was in revolt against Sarkin Zaria. The Sarkin Kano made peace between them and returned home. In Abdulahi's time Salemma Berka became great. In the time of Mohammed Belo this man revolted and was

degraded. In Abdulahi's time, too, the palace slaves became so great that they were like free men. They all rebelled in Mohammed Belo's time, but Allah helped Mohammed Belo to quell the rebellion. There were many great captains of war in Abdulahi's time, men without fear—so many of them that they could not be enumerated, but a few may be mentioned: Sarkin Yaki, Mallam Dogo and his son Düti, Jarumai Musa, Sarkin Bebeji Abubakr, Sarkin Rano Ali, Sarkin Gesu Osuman, Sarkin Ajura Jibbr. In this reign Sarkin Damagaram Babba came as far as Jirima and sacked Garun Allah. Sarkin Gummel Abdu Jatau came to Pogolawa to attack it. Sarkin Maradi Dan Boskori came to Katsina. Abdulahi went to meet him. They met at Kusada, but did not fight. For this reason the meeting was called "Algish Bigish Zuru Yakin Zuru," for they looked at each other and went back. There was also a fight between Barafia Sarkin Maradi and Sarkin Kano at Bichi. Barafia ran away and Abdulahi took all the spoils. It is not known how many men were killed and slain. We do not know much of what Abdulahi did in the early part of his reign. He ruled Kano twenty-seven years and eight days, and died at Karofi on his way to Sokoto.

XLVIII. Mohammed Belo, Son of Ibrahim Dabo.

A.H. 1300–1310. A.D. 1883–1892.

The forty-eighth Sarki was Mohammed Belo, son of Ibrahim Dabo. His mother was Shekkara. He was a very generous Sarki. He said to his friend Sarkin Fada Dan Gatuma, "You are Waziri Kano; I place in your hands the management of Kano." The Sarkin Fada was unrivalled as a settler of disputes. Belo was like his Wazir, and Sarkin Fada was like Sarki. When Sarki Fada died, Mohammed Belo stretched out his legs because he saw that now he must become Sarki in earnest. He expelled the Galadima Ibrahim from his office and banished him to Funkui in Zaria, whence his name, "Galadima na Funkui." Belo gave the post of Galadima to his son Tukr, and his son Zakari was made San Turaki. Another son Abubakr he made Chiroma in place of Chiroma Musa. . . .

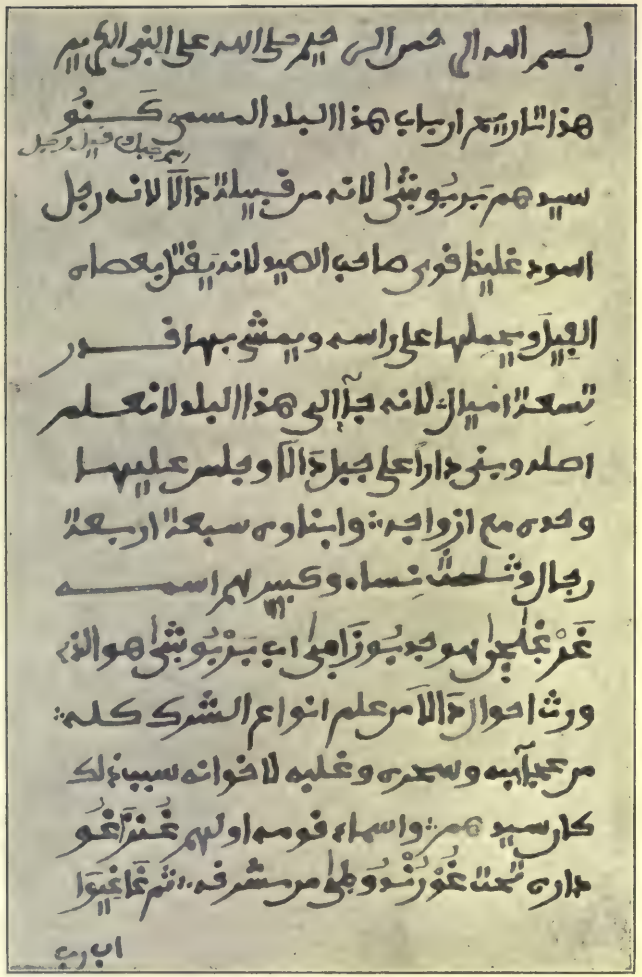


FIG. 1.—PAGE OF THE KANO CHRONICLE.

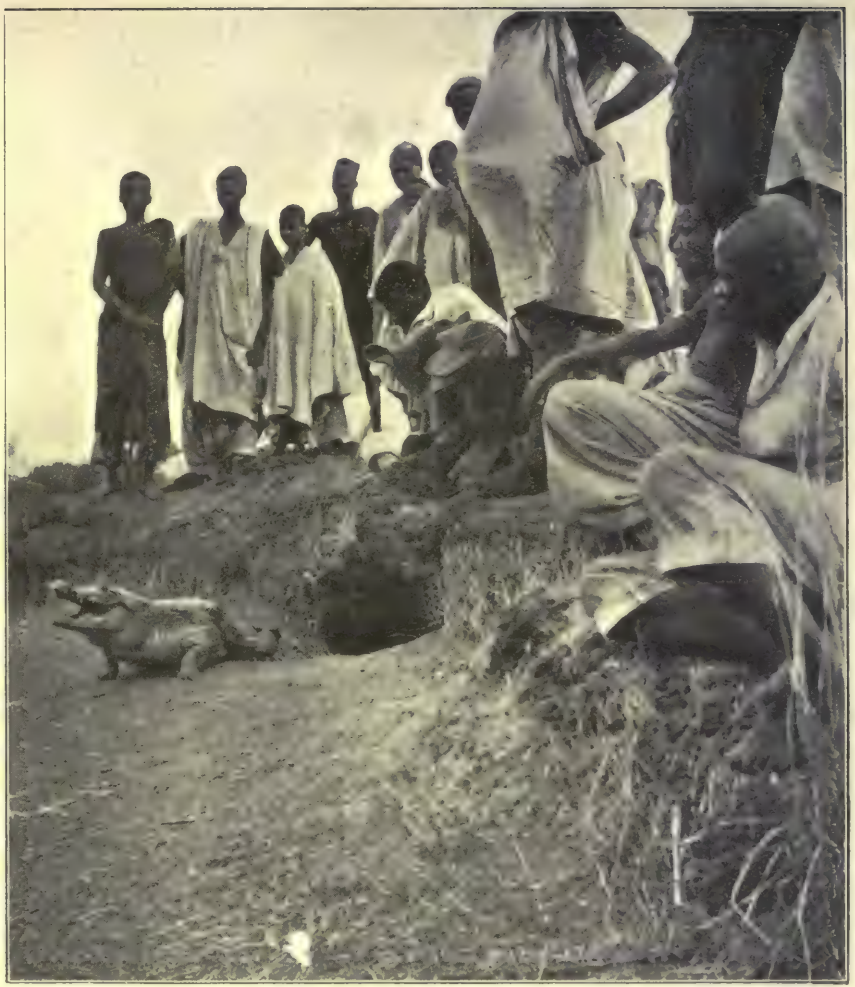


FIG. 2.—SACRED CROCODILE, SAID TO BE 200 YEARS OLD, AT THE VILLAGE OF MUSAWA, KATSINA. THE ANIMAL HAS A RING FIXED THROUGH ITS NOSE. (p. 80.)

Journal of the Royal Anthropological Institute, Vol. XXXVIII, 1908, Plate IX.



FIG. 1.



FIG. 2.

BAURA PLAYER: NOTE THE TIP OF THE SPEAR, AND THE IRON RINGS ON HIS WRISTS. (pp. 87, 89.)



FIG. 3.—TOMB OF ONE OF THE EARLY KINGS OF KATSINA, SIMILAR TO THOSE DESCRIBED BY EL BEKRI AT GHANA. (p. 61.)

CONTRIBUTIONS TO EGYPTIAN ANTHROPOLOGY.

By Charles S. Myers.

V. GENERAL CONCLUSIONS.

We are now in a position to bring together the various results that have come to light in the course of these contributions, and to study their relation to one another and to the broad problem of Egyptian ethnology.

We have seen[1] that in modern Egypt the Moslem population takes on increasingly negroid characters as we proceed from the Mediterranean towards the First Cataract. Is this the result of more frequent intermarriage with the inhabitants of the Sudan?

In preparing to answer this question, we cannot neglect the fact that similar differences in degree of negroid characters appear to exist among the Copts of Lower and Upper Egypt, who are known to have remained free from Sudanese admixture during the past 1,300 years. If, then, an increasing amount of Sudanese admixture be the cause of the increasing negroid character of Upper as compared with Lower Egypt, it is clear that the intermarriage must have occurred at a very remote date, and that its results have been perpetuated since then.

But we may reasonably doubt whether so long a persistence of the effects of intermarriage is possible. From many different quarters we have indications that ultimately an aboriginal people absorbs and exterminates the physical characters of those who come to settle among them. In the third of these contributions[2] we saw that the repeated migrations of Greeks into the Fayum, beginning about 2,500 years ago, and ending soon after the start of the Christian Era, have left no trace of an effect to-day on the physique of the modern dwellers in this oasis. The latter have a nasal index which is distinctly higher than that which occurs among the northern provinces of the Delta, and almost identical with the index found in the Nile Valley in the same latitude as the Fayum.

There are many writers on Egyptian ethnology who believe that from time immemorial there have always been at least two races in Egypt, the one Caucasian (Mediterranean or Libyan), the other negroid, and that to this day both these races are present throughout Egypt, although prevalent in different degrees in different regions. Now we may conceivably look for support of this hypothesis in the following directions.

[1] *Journal Anthrop. Inst.*, 1906, vol. xxxvi, pp. 237–261.

[2] *Ibid.*, pp. 261–263. Similar conclusions were reached in the second of these contributions, in our comparison of the "Prehistoric" and Modern Populations of Egypt (*ibid.*, 1905, vol. xxxv, pp. 80–91).

We should expect that the inhabitants of Middle Egypt, where, presumably, the two races are present in equal intensity, would tend to show greater variability than those of extreme Upper or of extreme Lower Egypt, in which one of the two races presumably predominates to the relative exclusion of the other. But, as a fact, we have found no such tendency whatever. There is no evidence that the peoples of different parts of Egypt differ in homogeneity. Here, however, we have to take into account our discovery[1] that the introduction of a negroid element, in not too great amount, although it may effect the average measurement, need not appreciably disturb the variability of the Egyptian. We have seen that the modern Moslems are more negroid, yet are not less homogeneous than the modern Copts, and that the mixed Moslems are more negroid, yet are not less homogeneous than the unmixed Moslems. But in each of these cases such negroid admixture is slight. We can only conclude that if anthropometric evidence is to be adduced for the presence of a Caucasian and a negroid race in the Egyptian population, these races must each exist in quite appreciable quantities.

Secondly, we should expect that the frequency curves for the provinces of Upper and Lower Egypt would have a markedly asymmetrical form, the one showing a skew in one direction, the other in the other, while the frequency curves for the provinces of Middle Egypt would approach the symmetrical form. Again, by reference to the curves,[2] we find nothing of the kind.

In the third place we should expect that a series of distribution curves of the same measurement would show identical peaks in different provinces of Egypt if two races really existed. This identity of peaks we have in general failed to find. Where it occurs we have shown[3] that it cannot possibly be held to indicate quality of race, inasmuch as the peaks lie far too close (*i.e.*, are too nearly of identical value) to have arisen from the inclusion of two types and their fluctuations within a single curve. There is, indeed, little reason to doubt that if only measurements could be taken in adequate number, the various provinces would each give smooth, peakless distribution curves, having, in respect of negroid characters, different averages dependent on the latitude of the provinces, but having like variability.[4]

I contend, then, that from the anthropometric standpoint, every province contains a homogeneous population, notwithstanding that the mean measurements vary in degree of negroidness according to province. On each side of the variable mean there are fluctuations to like extents in different provinces. There is no anthropometric evidence of duality of race. I consider that in spite of the various infiltrations of foreign blood in the past, modern Egypt contains a homogeneous population, which gradually shifts its average character as we proceed southwards from the shores of the Mediterranean to Nubia beyond the First Cataract. The

[1] *Journal Anthrop. Inst.*, 1906, vol. xxxvi, p. 270.

[2] *Ibid.*, pp. 247–253.

[3] *Ibid.*, pp. 254, 255.

[4] It is highly probable that the peaked curves, on which Professor Petrie unhappily bases his racial analyses of Egypt (The Huxley Lecture for 1906, published in this *Journal*, vol. xxxvi, pp. 225–231, and Plates XXVIII, XXIX), are sheer accidents, due to the examination of an insufficient number of measurements. (*Cf. Biometrika*, 1902, vol. i, p. 441, *et seq.*)

transition with which we may meet in such a travel is certainly not one from Egyptian to Sudanese. What transition there is, is from the fairer Mediterranean to the more swarthy Nubian population—a very different matter. The effects of Sudanese admixture in Egypt and Nubia are almost as patent as they would be in England. At the present day, as we have seen,[1] there is probably more Sudanese admixture in Lower than in Upper Egypt.

A side issue may be here considered. What degree of correlation obtains between the various negroid characters within given individuals? To what extent in Egypt does a broader face, for example, vary concurrently with a broader nose, or do thicker lips vary with a broader nose among the individuals of a given province?

To answer this question satisfactorily, I have determined the coefficient of correlation between nasal and facial indices for the fifty-three inhabitants of the province of Kena, and I find it to be −0·467. It will be remembered that a coefficient of correlation can vary between the limits of +1 and −1, the former indicating perfect correlation in the same direction, the latter indicating perfect correlation in the inverse direction, while a coefficient of zero indicates the total absence of correlation between the factors in question. The value −0·467 thus demonstrates a very distinct degree of inverse correlation between nasal and facial indices. It shows that broadness of face within the community tends to increase concurrently with broadness of nose—inasmuch as a low facial index implies a relatively broad face and a high nasal index implies a relatively broad nose.

I have also endeavoured to investigate the correlation between thickness of lips and broadness of nose. I give below the nasal indices of those individuals of Minia and Assiut who had unusually thin or unusually thick lips. The correlation between thickness of lips and breadth of nose is obvious.

Thin lips.			*Thick lips.*
66·67	73·47	79·17	80·0
70·00	73·91	79·17	81·63
70·59	76·60	81·82	82·93
72·00	78·26	84·44	83·33
72·55	79·17	—	85·11
73·33	79·17	—	—

But to establish a correlation between features which are of negroid character is quite a different thing from demonstrating the existence of a negroid race. I need not again allude to the difficulties which prevent our acceptance of the latter thesis. On the other hand, the existence of a correlation between negroid characters is no obstacle to the acceptance of the view as to the ethnology of Egypt, which I am advancing in this paper. There is no reason why a homogeneous race, varying in its affinity to negroid and Caucasian features, should not show the correlations we have demonstrated. The conditions which, in the case of

[1] *Journal Anthrop. Inst.*, 1906, vol. xxxvi, p. 264.

given individuals, bring about a greater negroid tendency in one direction, would be expected *a priori* to induce a similar tendency in other directions.

But what are these conditions which have produced the varying degree of negroid tendency in different parts of Egypt? The Copts appear to exhibit this varying tendency according to the part of Egypt to which they belong, in spite of the fact that they have married solely among each other for the past 1,300 years. Two explanations of the cause of the variableness suggest themselves. The first makes it dependent on climate; the second, which we have already considered, makes it dependent on negroid admixture from the very earliest times.

I have come to the conclusion that the effect of climate is far the more likely and more important of these two factors. I regard the aboriginal people of Egypt as a homogeneous folk, showing an inclination to vary in two or three distinct directions, towards the Caucasian, the negroid, or even the mongoloid. The same tendency is also shown among the inhabitants of our own shores. There is hardly any test of negroid or mongoloid character (save that of colour), which would not embrace a small but a certain number of our most purely bred fellow countrymen.[1]

Europeans show accidental variations in the direction, for example, of obliquely directed axes of the eyes or of frizzly hair. Such accidental variations I assume to have been present in the aboriginal Egyptian population, and I hold that environment has been the selecting factor which has intensified and made permanent one or other of these accidental variations.

It would, of course, be absurd to say that a broader nose or a more projecting jaw is essential for a longer life in Upper as compared with Lower Egypt. But I believe that correlated with these physical features there are certain unknown physiological factors which make life easier to sustain in the dry, warm weather of Upper Egypt than in the wetter, cooler and more fertile regions near the Mediterranean.[2]

On the other hand, I am far from denying that sporadic admixture with the Sudanese or with Levantine peoples is without effect or that it has not taken place. We have seen how the modern Moslems are more negroid than the Copts, and how the "mixed" group is more negroid than the unmixed Moslems. We may admit the act and the effect of occasional admixture, and yet feel convinced that alone such admixture is insufficient to explain the difficulties at issue.

To sum up. There is no anthropometric (despite the historical) evidence that

[1] This fact dispels the following objection adduced in Thomson and McIver's *The Ancient Races of the Thebaïd*: "No one would allow that a negro nose and an European nose are simply legitimate deviations from a single race type. And yet these are the extremes which occur in our series" (p. 50). I contend that the extremes *do* meet and overlap, and that in the case of Egypt the margin of overlapping is still further widened by sporadic Sudanese and Levantine admixture.

[2] Compare for a similar correlation the well-known tubercular and rheumatic types of physique and colour existing among ourselves.

the population of Egypt, past or present, is composed of several different races. (Prior to the present investigation, my opinion had been diametrically opposite.) Our new anthropometric data favour the view which regards the Egyptians always as a homogeneous people who have varied now towards Caucasian, now towards negroid characters (according to environment), showing such close anthropometric affinity to Libyan, Arabian and like neighbouring peoples, showing such variability and possibly such power of absorption, that from the anthropometric standpoint no evidence is obtainable that the modern Egyptians have been appreciably affected by other than sporadic Sudanese admixture.

APPENDIX.

The following tables give the more important measurements made by me in Egypt. They comprise nearly all those measurements which have been drawn upon in these contributions. A complete list of the data obtained has been already published[1]; it need not be repeated here. The numbers at the top of the twenty-four columns of each table refer to the following measurements :—

3. Stature.
6. Height of shoulder from ground.
7. Height of elbow „ „
8. Height of wrist „ „
9. Height of hips „ „
10. Height of knee „ „
11. Height of ankle „ „
12. Head breadth.
13. Head length.
14. Upper facial length.
15. Total facial length.
16. Bimalar facial breadth.
17. Maximal facial breadth (bizygomatic).
22. External interorbital breadth.
25. Nasal breadth.
26. Nasal length.
27. Orbito-nasal arc.
28. Horizontal circumference.
30. Auriculo-vertical radius.
31. Auriculo-frontal radius.
32. Auriculo-nasal radius.
33. Auriculo-alveolar radius.
34. Auriculo-mental radius.
35. Auriculo-occipital radius.

[1] *Journal Anthrop. Inst.*, 1903, vol. xxxiii, pp. 82, 83 ; 1906, vol. xxxvi, p. 237. All the measurements, together with photographs and other data (shape, colour, texture, etc.), have been deposited at the Royal Anthropological Institute, where they are available for future study.

Each subject, after he had been photographed and his physical features had been noted, was marked with a blue pencil on the following points:—the tip of the acromion for 6 (in the above list of measurements), the edge of the head of the radius for 7, the tip of the styloid process of the radius for 8, the upper margin of the great trochanter for 9, the lower border of the internal condyle of the femur for 10, the tip of the internal malleolus for 11, the glabella for 13 and 28, the nasion for 14, 15, 26, and 32, the lower border of the chin for 15 and 34, the lower angle of the malar bone for 16, and the external border of the orbits at the suture for 22 and 27.[1]

Measurements 6–11 were taken upon the subject standing beside a wall to which a measuring tape had been fixed. A right-angled triangular piece of celluloid was applied to the scale to find the height of the point in question.

Measurements 12–26 were taken with callipers in the ordinary way. The sliding instrument, designed by Mr. John Gray (and described in this *Journal*, vol. xxxi, p. 111), was used throughout.

Measurements 27 and 28 were taken by means of a steel tape passed between the external margins of the orbits across the nose, or embracing the glabella and the most projecting point of the occiput.

Measurements 30–35 were taken from the ear hole to the most projecting frontal or occipital points or to the nasion, upper alveolus or chin. An apparatus, fitted with a goniometer (as described by me in *Man*, vol. iii, 1903, No. 4, p. 12), was used for this purpose. It was provided with a device, designed for me by Mr. Gray, which kept the horizontal or vertical traction upon the ear holes constant during the taking of the various radial measurements.

[1] Herein I have been guided by the excellent *Anthropologische Methoden*, published by the late Dr. Emil Schmidt, Leipzig, 1888.

KENA.

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
38	1754	—	—	—	—	—	—	146	190	70	115	98	136	101	37	44	108	543	—	—	—	—	—	—
57	1714	—	—	—	—	—	—	143	192	61	110	106	136	102	38	45	113	540	—	—	—	—	—	—
101	1772	—	—	—	—	—	—	132	199	73	123	105	129	98	42	55	110	543	—	—	—	—	—	—
122	1752	—	—	—	—	—	—	140	190	68	116	102	137	98	35	50	107	539	—	—	—	—	—	—
123	1713	—	—	—	—	—	—	146	191	65	109	98	136	99	37	47	114	546	—	—	—	—	—	—
124	1730	—	—	—	—	—	—	152	195	76	124	107	136	103	37	54	116	555	—	—	—	—	—	—
127	1730	—	—	—	—	—	—	146	202	68	115	99	133	99	36	45	114	562	—	—	—	—	—	—
163	1717	—	—	—	—	—	—	144	190	68	118	110	137	105	36	48	122	526	—	—	—	—	—	—
169	1713	—	—	—	—	—	—	140	188	69	118	108	133	99	41	52	111	537	—	—	—	—	—	—
182	1700	—	—	—	—	—	—	147	201	68	115	117	150	110	39	48	122	565	—	—	—	—	—	—
191	1723	—	—	—	—	—	—	145	187	70	119	97	132	96	34	47	109	533	—	—	—	—	—	—
207	1700	—	—	—	—	—	—	143	196	67	114	102	137	108	35	50	123	—	—	—	—	—	—	—
222	1684	—	—	—	—	—	—	138	182	65	108	104	135	99	32	47	113	510	—	—	—	—	—	—
237	—	—	—	—	—	—	—	144	191	66	114	105	132	98	35	50	114	—	—	—	—	—	—	—
243	—	—	—	—	—	—	—	146	200	58	108	101	136	91	36	46	108	—	—	—	—	—	—	—
260	1711	1377	1075	813	860	465	75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
263	1702	—	—	—	—	—	—	147	191	67	—	—	143	—	41	47	—	—	—	—	—	—	—	—
269	1710	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
270	1820	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
312	1778	1455	1085	814	949	465	70	140	197	65	—	—	132	—	37	48	—	—	—	—	—	—	—	—
313	1705	1366	1048	775	910	467	65	146	191	68	—	—	141	—	34	47	—	—	—	—	—	—	—	—
314	1747	1406	1085	795	900	448	68	142	191	74	—	—	131	—	38	50	—	—	—	—	—	—	—	—
326	1710	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
352	1712	1393	1045	784	940	465	58	143	199	73	—	—	140	—	35	52	—	—	—	—	—	—	—	—

KENA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
353	1706	1380	1068	800	903	460	70	138	189	65	—	—	138	—	36	44	—	—	—	—	—	—	—	—
375	1708	1368	1042	785	890	450	68	144	196	67	—	—	136	—	34	45	—	—	—	—	—	—	—	—
381	1697	—	—	—	—	—	—	138	196	66	—	—	142	—	40	47	—	—	—	—	—	—	—	—
445	1705	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
459	1718	1370	1073	772	925	455	63	148	202	67	—	—	139	—	34	51	—	—	—	—	—	—	—	—
470	1673	1375	1055	790	913	488	70	141	196	60	—	—	139	—	35	48	—	—	—	—	—	—	—	—
496	1691	1360	1025	779	890	455	59	149	197	61	—	—	140	—	40	44	—	—	—	—	—	—	—	—
502	—	—	—	—	—	—	—	144	204	65	121	106	134	96	39	47	113	565	147	135	110	111	134	113
555	—	—	—	—	—	—	—	140	200	62	113	95	134	—	39	46	—	—	142	—	—	—	—	—
579	—	—	—	—	—	—	—	149	182	69	121	108	144	—	37	49	—	—	152	—	—	—	—	—
580	—	—	—	—	—	—	—	148	183	68	115	100	128	—	36	48	—	—	142	—	—	—	—	—
592	—	—	—	—	—	—	—	147	200	62	110	109	144	103	39	41	114	564	150	141	108	107	119	119
618	—	—	—	—	—	—	—	144	200	58	103	101	138	97	41	42	110	550	147	132	109	109	128	116
630	—	—	—	—	—	—	—	138	196	64	111	99	127	—	36	51	—	—	147	126	103	107	132	123
637	—	—	—	—	—	—	—	146	192	61	100	100	129	99	33	45	110	541	149	133	108	112	123	110
655	—	—	—	—	—	—	—	141	201	67	113	114	137	105	47	45	124	557	147	135	112	119	136	122
676	—	—	—	—	—	—	—	142	195	68	110	108	141	—	35	47	—	—	150	—	—	—	—	—
710	—	—	—	—	—	—	—	143	189	61	102	105	137	95	39	44	108	—	145	128	102	106	125	116
731	—	—	—	—	—	—	—	139	187	66	112	108	131	95	34	52	111	530	140	128	106	104	115	150
735	—	—	—	—	—	—	—	148	188	68	118	103	133	—	39	50	—	—	144	132	107	109	129	124
794	—	—	—	—	—	—	—	142	200	61	111	110	140	105	43	46	117	558	142	132	108	119	137	122
801	—	—	—	—	—	—	—	143	194	67	114	108	140	—	37	50	—	—	146	132	108	110	133	116
858	—	—	—	—	—	—	—	144	188	65	115	110	139	—	39	45	—	—	148	132	105	114	130	124
898	—	—	—	—	—	—	—	150	197	72	117	113	143	105	40	49	126	—	145	134	114	112	128	124
903	—	—	—	—	—	—	—	145	195	68	118	109	141	106	36	50	123	—	142	127	110	111	135	117

KENA *(continued)*.

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
921	—	—	—	—	—	—	—	144	198	68	116	117	146	107	37	45	119	—	143	131	108	116	143	119
928	—	—	—	—	—	—	—	145	199	68	116	112	138	95	37	49	111	—	142	133	106	103	128	123
964	—	—	—	—	—	—	—	147	200	68	110	111	139	101	34	49	116	—	145	132	109	110	124	124
965	—	—	—	—	—	—	—	137	200	71	123	110	137	98	38	48	115	—	144	128	109	109	124	125
971	—	—	—	—	—	—	—	147	201	62	107	108	138	—	39	46	—	—	144	131	103	107	125	124
980	—	—	—	—	—	—	—	148	207	65	112	115	147	101	37	45	—	—	153	134	110	114	128	134
988	—	—	—	—	—	—	—	145	191	69	119	110	133	98	36	48	111	—	148	135	104	103	123	123
989	—	—	—	—	—	—	—	148	193	69	116	114	136	101	38	50	114	—	153	135	108	113	124	121
1001	—	—	—	—	—	—	—	145	205	65	116	114	139	103	39	46	117	—	152	133	109	112	131	128

GIRGA.

13	1703	—	—	—	—	—	—	140	189	67	120	114	137	107	44	48	119	542	—	—	—	—	—	—
34	1690	—	—	—	—	—	—	151	201	65	118	105	143	103	37	48	123	568	—	—	—	—	—	—
37	1704	—	—	—	—	—	—	135	188	73	117	100	142	109	37	48	113	523	—	—	—	—	—	—
46	1755	—	—	—	—	—	—	138	195	69	123	108	138	111	38	52	121	537	—	—	—	—	—	—
48	1695	—	—	—	—	—	—	149	187	63	114	104	143	108	38	44	113	542	—	—	—	—	—	—
59	1798	—	—	—	—	—	—	147	190	58	110	100	142	104	38	43	110	545	—	—	—	—	—	—
61	1720	—	—	—	—	—	—	147	191	69	122	103	141	104	38	50	123	542	—	—	—	—	—	—
72	1605	—	—	—	—	—	—	139	194	64	113	95	135	100	40	48	110	540	—	—	—	—	—	—
79	1790	—	—	—	—	—	—	143	202	74	132	110	142	105	39	54	115	558	—	—	—	—	—	—
86	1743	—	—	—	—	—	—	146	194	66	118	95	135	99	34	50	115	534	—	—	—	—	—	—
92	1690	—	—	—	—	—	—	143	203	67	118	97	135	105	38	50	115	565	—	—	—	—	—	—
96	1713	—	—	—	—	—	—	146	199	61	109	102	134	100	37	48	117	—	—	—	—	—	—	—

GIRGA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
103	1757	—	—	—	—	—	—	148	199	66	114	99	145	102	38	51	122	556	—	—	—	—	—	—
118	1707	—	—	—	—	—	—	164	193	67	115	107	146	102	34	50	123	571	—	—	—	—	—	—
126	1730	—	—	—	—	—	—	146	203	72	124	103	139	106	39	51	121	561	—	—	—	—	—	—
130	1745	—	—	—	—	—	—	144	189	63	113	105	139	97	38	49	110	531	—	—	—	—	—	—
137	1770	—	—	—	—	—	—	143	199	59	110	109	135	100	37	44	115	545	—	—	—	—	—	—
146	1743	—	—	—	—	—	—	144	192	64	118	107	135	99	34	54	113	—	—	—	—	—	—	—
147	1785	—	—	—	—	—	—	149	196	69	127	112	146	112	39	50	130	560	—	—	—	—	—	—
167	1757	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
168	1742	—	—	—	—	—	—	137	185	65	118	99	134	98	38	48	113	—	—	—	—	—	—	—
177	1745	—	—	—	—	—	—	148	196	72	119	105	136	104	42	53	122	550	—	—	—	—	—	—
180	1700	—	—	—	—	—	—	147	190	65	116	110	142	104	32	51	116	546	—	—	—	—	—	—
183	1710	—	—	—	—	—	—	142	194	59	104	108	133	102	37	43	112	533	—	—	—	—	—	—
186	1692	—	—	—	—	—	—	140	185	65	118	100	124	92	36	49	109	520	—	—	—	—	—	—
187	1725	—	—	—	—	—	—	145	196	52	96	106	139	107	37	43	116	558	—	—	—	—	—	—
189	1755	—	—	—	—	—	—	142	196	59	106	110	132	104	38	48	122	548	—	—	—	—	—	—
200	1705	—	—	—	—	—	—	138	198	62	114	109	136	107	36	47	123	548	—	—	—	—	—	—
210	1718	—	—	—	—	—	—	144	191	67	116	99	133	97	37	51	110	543	—	—	—	—	—	—
211	1700	—	—	—	—	—	—	142	193	67	118	102	135	102	34	54	116	543	—	—	—	—	—	—
213	1750	—	—	—	—	—	—	145	191	66	117	108	140	103	33	49	115	547	—	—	—	—	—	—
214	1713	—	—	—	—	—	—	145	191	70	123	107	138	100	36	54	115	540	—	—	—	—	—	—
242	—	—	—	—	—	—	—	146	199	63	110	106	135	102	39	46	119	—	—	—	—	—	—	—
246	1750	—	—	—	—	—	—	140	195	64	117	109	134	96	31	49	114	546	—	—	—	—	—	—
287	1785	—	—	—	—	—	—	148	198	66	—	—	141	—	37	48	—	—	—	—	—	—	—	—
291	1716	1361	1015	752	948	484	75	139	197	61	—	—	136	—	37	47	—	—	—	—	—	—	—	—
301	1708	—	—	—	—	—	—	152	205	68	—	—	139	—	35	45	—	—	—	—	—	—	—	—

GIRGA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	23	30	31	32	33	34	35
306	1769	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
330	1747	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
346	1708	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
348	1733	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
358	1707	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
383	1730	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
414	1686	1370	1039	780	938	490	63	145	198	66	—	—	139	—	35	43	—	—	—	—	—	—	—	—
419	1840	1515	1150	880	960	493	86	144	195	67	—	—	140	—	35	46	—	—	—	—	—	—	—	—
438	1735	1425	1080	810	965	477	60	140	200	67	—	—	133	—	36	46	—	—	—	—	—	—	—	—
449	1703	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
460	1690	1385	1045	790	885	460	64	143	186	68	—	—	128	—	35	48	—	—	—	—	—	—	—	—
476	1814	1490	1135	865	955	490	70	140	—	68	—	—	135	—	36	48	—	—	—	—	—	—	—	—
485	1704	1370	1042	803	913	482	68	144	195	67	—	—	140	—	34	53	—	—	—	—	—	—	—	—
492	1730	1400	1065	800	928	471	68	139	190	68	—	—	138	—	33	47	—	—	—	—	—	—	—	—
498	1744	1414	1085	820	929	486	70	140	192	66	—	—	132	—	35	46	—	—	—	—	—	—	—	—
501	—	—	—	—	—	—	—	143	197	63	110	104	133	103	36	44	113	556	144	128	100	107	—	—
520	—	—	—	—	—	—	—	137	184	67	114	100	130	98	34	47	113	519	139	132	105	110	125	107
534	—	—	—	—	—	—	—	147	187	69	115	114	137	105	39	51	124	554	150	134	114	112	128	114
538	—	—	—	—	—	—	—	141	193	68	118	111	137	105	36	49	121	536	141	130	109	113	131	118
539	—	—	—	—	—	—	—	150	193	66	113	110	144	109	37	49	121	550	143	133	108	111	126	114
540	—	—	—	—	—	—	—	149	184	60	107	104	139	—	36	47	—	—	—	—	—	—	—	—
545	—	—	—	—	—	—	—	145	198	65	113	112	145	—	36	43	—	—	—	—	—	—	—	—
546	—	—	—	—	—	—	—	155	177	73	124	115	143	—	34	52	—	—	—	—	—	—	—	—
565	—	—	—	—	—	—	—	146	204	68	116	114	138	—	40	48	—	—	147	—	—	—	—	—
569	—	—	—	—	—	—	—	148	193	64	114	106	145	—	36	43	—	—	153	—	—	—	—	—

GIRGA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
581	—	—	—	—	—	—	—	133	185	64	110	107	135	—	34	45	—	—	143	—	—	—	—	—
621	—	—	—	—	—	—	—	143	205	66	110	107	142	—	40	49	—	—	148	136	113	116	138	121
623	—	—	—	—	—	—	—	146	202	69	119	108	134	—	39	50	—	—	158	—	—	—	—	—
625	—	—	—	—	—	—	—	143	198	66	113	—	—	—	38	47	—	—	145	—	—	—	—	—
636	—	—	—	—	—	—	—	142	203	64	110	112	144	104	37	43	121	560	146	135	111	114	129	132
664	—	—	—	—	—	—	—	143	204	72	113	112	139	—	45	49	—	—	147	—	—	—	—	—
695	—	—	—	—	—	—	—	—	—	68	114	106	135	—	34	45	—	—	—	—	—	—	—	—
708	—	—	—	—	—	—	—	140	192	70	117	100	133	—	35	48	—	—	147	135	112	116	137	114
755	—	—	—	—	—	—	—	145	207	63	109	112	139	—	37	48	—	—	147	134	112	111	121	131
767	—	—	—	—	—	—	—	152	197	67	114	114	146	—	38	47	—	—	153	—	—	—	—	—
770	—	—	—	—	—	—	—	147	192	65	113	116	147	—	38	47	—	—	144	133	112	114	138	119
777	—	—	—	—	—	—	—	148	190	—	—	—	142	—	—	—	—	—	140	128	109	113	129	112
785	—	—	—	—	—	—	—	141	192	—	—	—	144	—	—	—	—	—	140	124	107	115	140	122
804	—	—	—	—	—	—	—	140	196	66	112	106	136	98	35	45	115	545	140	131	107	113	130	118
808	—	—	—	—	—	—	—	147	197	65	107	115	144	—	—	—	—	—	143	138	108	111	128	114
835	—	—	—	—	—	—	—	144	205	70	117	112	141	106	35	47	121	566	143	130	111	115	133	126
836	—	—	—	—	—	—	—	152	197	63	107	114	144	100	37	43	109	565	145	135	107	113	130	123
847	—	—	—	—	—	—	—	148	196	66	109	107	142	—	36	50	—	—	145	132	104	104	125	124
857	—	—	—	—	—	—	—	150	198	64	118	110	145	—	40	45	—	—	148	—	—	—	—	—
879	—	—	—	—	—	—	—	141	191	68	117	106	137	—	40	50	—	—	148	134	108	112	125	121
892	—	—	—	—	—	—	—	146	186	70	114	121	147	101	41	48	111	—	144	127	104	117	135	116
893	—	—	—	—	—	—	—	144	197	62	108	108	129	98	42	43	111	—	148	130	107	107	134	124
902	—	—	—	—	—	—	—	147	201	71	123	114	137	—	35	50	—	—	151	135	107	109	131	131
933	—	—	—	—	—	—	—	144	193	68	114	114	137	107	38	45	123	—	148	133	110	112	126	118
929	—	—	—	—	—	—	—	146	184	68	110	108	137	—	33	47	—	—	142	128	106	107	125	110

GIRGA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
946	—	—	—	—	—	—	—	139	197	67	116	111	139	102	39	47	—	—	142	134	111	115	132	115
954	—	—	—	—	—	—	—	141	190	61	113	101	135	—	33	41	—	—	139	125	103	107	125	114
955	—	—	—	—	—	—	—	143	199	64	112	112	134	103	38	46	—	—	138	131	109	112	130	119
956	—	—	—	—	—	—	—	143	194	66	126	107	134	100	38	47	117	—	137	129	110	116	132	120
962	—	—	—	—	—	—	—	141	195	60	103	112	134	95	38	43	106	—	133	128	106	111	127	114
966	—	—	—	—	—	—	—	142	193	70	112	111	135	—	43	50	—	—	148	—	—	—	—	—

ASSIUT.

35	1710	—	—	—	—	—	—	143	206	64	118	103	135	113	45	48	119	563	—	—	—	—	—	—
42	1737	—	—	—	—	—	—	137	189	65	116	98	134	104	37	53	116	530	—	—	—	—	—	—
69	1761	—	—	—	—	—	—	147	204	70	124	110	146	114	44	53	122	570	—	—	—	—	—	—
75	1650	—	—	—	—	—	—	143	185	64	113	104	129	104	36	47	113	530	—	—	—	—	—	—
120	1707	—	—	—	—	—	—	140	186	67	116	108	135	100	35	50	116	527	—	—	—	—	—	—
145	1754	—	—	—	—	—	—	158	215	63	117	107	142	108	38	48	122	603	—	—	—	—	—	—
155	1713	—	—	—	—	—	—	136	192	65	117	100	128	93	38	47	113	533	—	—	—	—	—	—
160	1703	—	—	—	—	—	—	137	198	61	113	114	139	98	41	47	113	542	—	—	—	—	—	—
171	1704	—	—	—	—	—	—	139	203	69	123	115	141	106	40	51	120	555	—	—	—	—	—	—
192	1704	—	—	—	—	—	—	140	192	63	118	103	131	97	34	47	114	537	—	—	—	—	—	—
197	1723	—	—	—	—	—	—	151	196	68	124	107	138	108	36	52	122	566	—	—	—	—	—	—
227	—	—	—	—	—	—	—	136	200	73	132	104	140	107	37	51	123	—	—	—	—	—	—	—
236	—	—	—	—	—	—	—	144	190	65	115	105	139	96	36	52	112	—	—	—	—	—	—	—
257	—	—	—	—	—	—	—	—	—	64	—	—	132	—	37	46	—	—	—	—	—	—	—	—
258	1708	—	—	—	—	—	—	146	201	64	—	—	137	—	36	45	—	—	—	—	—	—	—	—

ASSIUT (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
261	1725	320	260	—	—	—	—	139	195	63	—	—	133	—	36	46	—	—	—	—	—	—	—	—
264	1712	—	—	—	—	—	—	144	201	66	—	—	133	—	36	48	—	—	—	—	—	—	—	—
281	1737	—	—	—	—	—	—	150	195	70	—	—	139	—	39	52	—	—	—	—	—	—	—	—
299	1725	—	—	—	—	—	—	146	201	61	—	—	139	—	38	45	—	—	—	—	—	—	—	—
300	1743	—	—	—	—	—	—	147	202	66	—	—	143	—	38	42	—	—	—	—	—	—	—	—
344	1704	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
355	1705	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
363	1789	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
389	1718	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
391	1760	1406	1094	840	900	448	57	150	194	66	—	—	137	—	34	45	—	—	—	—	—	—	—	—
395	1725	1390	1074	823	882	442	58	142	204	65	—	—	138	—	35	48	—	—	—	—	—	—	—	—
399	1740	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
401	1750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
403	1660	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
406	1760	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
432	1795	1486	1130	840	975	489	69	140	201	65	—	—	142	—	43	47	—	—	—	—	—	—	—	—
435	1693	—	—	—	—	—	—	136	—	69	—	—	133	—	36	50	—	—	—	—	—	—	—	—
437	1705	—	—	—	—	—	—	141	189	65	—	—	133	—	36	50	—	—	—	—	—	—	—	—
455	1687	—	—	—	—	—	—	146	189	59	—	—	141	—	38	41	—	—	—	—	—	—	—	—
461	1742	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
462	1773	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
477	1745	1385	1052	805	890	453	67	148	199	66	—	—	142	—	38	43	—	—	—	—	—	—	—	—
484	1692	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
487	1689	1365	1030	771	918	465	66	149	196	65	—	—	148	—	36	49	—	—	—	—	—	—	—	—
494	1696	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

ASSIUT (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
503	—	—	—	—	—	—	—	145	200	64	109	107	136	100	34	44	115	555	149	132	111	111	122	116
506	—	—	—	—	—	—	—	142	199	67	117	110	137	—	39	49	—	—	—	—	—	—	—	—
514	—	—	—	—	—	—	—	151	186	59	107	101	134	97	34	46	114	540	—	—	—	—	—	—
521	—	—	—	—	—	—	—	153	198	66	115	110	147	107	40	48	123	562	143	135	113	118	138	123
537	—	—	—	—	—	—	—	144	190	64	105	101	135	96	36	51	109	540	136	—	—	—	—	—
543	—	—	—	—	—	—	—	147	198	70	114	104	140	—	37	48	—	—	—	—	—	—	—	—
544	—	—	—	—	—	—	—	144	204	70	115	118	137	—	33	45	—	—	—	—	—	—	—	—
549	—	—	—	—	—	—	—	142	185	66	113	111	137	—	34	41	—	—	—	—	—	—	—	—
559	—	—	—	—	—	—	—	147	199	70	121	107	139	—	31	51	—	—	153	—	—	—	—	—
562	—	—	—	—	—	—	—	143	196	66	107	107	140	—	32	47	—	—	146	—	—	—	—	—
567	—	—	—	—	—	—	—	140	201	71	123	107	138	—	40	50	—	—	142	—	—	—	—	—
638	—	—	—	—	—	—	—	142	193	65	113	107	137	—	36	46	—	—	139	—	—	—	—	—
647	—	—	—	—	—	—	—	138	190	67	114	109	129	—	45	50	—	—	142	—	—	—	—	—
650	—	—	—	—	—	—	—	137	194	66	109	109	139	—	36	48	—	—	144	—	—	—	—	—
668	—	—	—	—	—	—	—	141	191	64	112	102	134	—	36	47	—	—	148	—	—	—	—	—
743	—	—	—	—	—	—	—	144	198	67	113	104	135	—	35	50	—	—	146	135	112	118	135	113
783	—	—	—	—	—	—	—	148	197	—	—	—	137	—	—	—	—	—	149	138	109	107	127	123
791	—	—	—	—	—	—	—	144	197	—	—	—	144	—	—	—	—	—	148	137	112	109	128	120
805	—	—	—	—	—	—	—	144	196	—	—	—	138	—	—	—	—	—	140	138	108	105	125	119
813	—	—	—	—	—	—	—	146	200	73	119	107	135	101	40	50	115	555	142	130	110	111	122	124
846	—	—	—	—	—	—	—	151	203	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
860	—	—	—	—	—	—	—	150	205	66	109	108	144	—	40	49	—	—	140	132	113	119	132	118
863	—	—	—	—	—	—	—	137	188	70	110	98	128	—	32	50	—	—	142	—	—	—	—	—
880	—	—	—	—	—	—	—	140	200	62	108	109	133	—	38	42	—	—	143	129	104	109	131	120
888	—	—	—	—	—	—	—	140	198	70	119	116	136	—	38	48	—	—	147	136	109	112	130	121

ASSIUT (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
904	—	—	—	—	—	—	—	144	199	64	115	111	135	—	41	44	—	—	142	132	110	116	135	112
915	—	—	—	—	—	—	—	148	211	67	118	114	144	105	36	47	120	—	143	135	115	117	133	127
916	—	—	—	—	—	—	—	139	200	63	110	102	131	—	35	45	—	—	144	—	—	—	—	—
924	—	—	—	—	—	—	—	144	191	65	112	118	149	—	39	47	—	—	138	129	104	114	131	119
926	—	—	—	—	—	—	—	144	204	70	116	120	141	112	38	50	135	—	150	133	108	113	127	129
953	—	—	—	—	—	—	—	144	189	69	116	111	136	—	38	48	—	—	140	—	—	—	—	—
963	—	—	—	—	—	—	—	156	192	69	117	128	151	—	38	50	—	—	140	—	—	—	—	—
974	—	—	—	—	—	—	—	140	194	58	101	104	138	101	34	43	115	—	133	127	108	116	138	115

MINIA.

31	1740	—	—	—	—	—	—	145	195	67	113	103	139	106	38	53	115	548	—	—	—	—	—	—
44	1698	—	—	—	—	—	—	145	203	63	114	100	143	109	35	49	120	562	—	—	—	—	—	—
54	1718	—	—	—	—	—	—	138	190	65	117	105	138	104	38	50	113	543	—	—	—	—	—	—
76	1663	—	—	—	—	—	—	146	189	66	114	106	130	—	33	53	113	537	—	—	—	—	—	—
77	1654	—	—	—	—	—	—	134	188	66	114	98	130	95	36	53	115	528	—	—	—	—	—	—
87	1785	—	—	—	—	—	—	146	192	69	119	109	144	103	38	53	114	545	—	—	—	—	—	—
91	1725	—	—	—	—	—	—	146	196	72	118	105	138	108	38	55	120	554	—	—	—	—	—	—
93	1693	—	—	—	—	—	—	142	197	64	113	102	138	104	34	47	118	553	—	—	—	—	—	—
173	1723	—	—	—	—	—	—	146	199	64	120	103	140	106	35	47	118	552	—	—	—	—	—	—
190	1737	—	—	—	—	—	—	148	192	66	118	98	138	100	39	50	115	548	—	—	—	—	—	—
198	1720	—	—	—	—	—	—	140	202	67	121	105	142	103	39	51	115	555	—	—	—	—	—	—
235	1707	—	—	—	—	—	—	146	196	68	116	109	135	98	35	52	113	—	—	—	—	—	—	—
240	—	—	—	—	—	—	—	143	194	70	125	111	140	103	32	46	122	—	—	—	—	—	—	—
244	—	—	—	—	—	—	—	147	196	65	112	105	135	101	40	42	113	—	—	—	—	—	—	—

MINIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
256	1728	—	—	—	—	—	—	150	198	69	—	—	136	—	36	52	—	—	—	—	—	—	—	—
294	1705	1359	1049	779	885	445	72	141	184	58	—	—	132	—	36	43	—	—	—	—	—	—	—	—
302	1700	—	—	—	—	—	—	149	187	64	—	—	132	—	38	48	—	—	—	—	—	—	—	—
349	1707	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
364	1760	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
386	1726	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
394	1736	1389	1050	815	898	457	59	142	190	70	—	—	143	—	36	47	—	—	—	—	—	—	—	—
433	1732	1415	1060	800	943	464	64	145	200	69	—	—	133	—	40	47	—	—	—	—	—	—	—	—
436	1698	1360	1035	780	885	455	62	142	197	67	—	—	140	—	38	48	—	—	—	—	—	—	—	—
454	1728	1390	1055	795	923	473	62	148	195	71	—	—	139	—	38	55	—	—	—	—	—	—	—	—
490	1708	—	—	—	—	—	—	142	182	62	—	—	127	—	36	45	—	—	—	—	—	—	—	—
535	—	—	—	—	—	—	—	150	191	66	108	107	143	101	41	45	121	562	140	131	107	107	125	110
552	—	—	—	—	—	—	—	143	186	64	111	99	133	—	35	47	—	—	143	—	—	—	—	—
619	—	—	—	—	—	—	—	142	203	61	110	105	—	—	39	41	—	—	146	—	—	—	—	—
644	—	—	—	—	—	—	—	140	195	63	106	103	131	—	36	44	—	—	143	—	—	—	—	—
683	—	—	—	—	—	—	—	146	192	59	104	111	134	—	38	41	—	—	136	—	—	—	—	—
712	—	—	—	—	—	—	—	144	200	—	—	—	—	—	—	—	—	—	148	133	111	115	133	119
753	—	—	—	—	—	—	—	144	193	61	102	110	137	—	40	43	—	—	146	133	106	110	129	119
757	—	—	—	—	—	—	—	—	—	66	114	113	137	—	37	48	—	—	—	—	—	—	—	—
759	—	—	—	—	—	—	—	144	184	58	98	104	134	—	36	44	—	—	143	128	103	102	121	104
775	—	—	—	—	—	—	—	139	192	—	—	—	138	—	—	—	—	—	139	127	111	119	138	115
814	—	—	—	—	—	—	—	138	196	69	109	106	137	100	36	47	114	547	143	133	110	108	133	116
894	—	—	—	—	—	—	—	139	196	67	117	113	140	—	35	48	—	—	138	—	—	—	—	—
900	—	—	—	—	—	—	—	134	197	65	105	117	137	101	36	46	114	—	140	124	103	109	127	117
982	—	—	—	—	—	—	—	145	197	69	118	110	139	102	37	51	—	—	143	136	112	114	139	118

BENI SUEF.

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
3	1830	1488	1143	853	978	462	—	157	200	67	125	113	146	113	37	48	123	569	—	—	—	—	—	—
9	1720	—	—	—	—	—	—	140	188	69	124	98	138	111	33	48	122	533	—	—	—	—	—	—
49	1707	—	—	—	—	—	—	143	203	57	110	113	138	108	38	46	115	555	—	—	—	—	—	—
74	1690	—	—	—	—	—	—	150	198	60	112	101	137	105	38	46	118	560	—	—	—	—	—	—
108	1695	—	—	—	—	—	—	143	203	63	118	107	142	101	40	52	115	566	—	—	—	—	—	—
109	1690	—	—	—	—	—	—	139	199	68	118	104	145	103	36	51	122	547	—	—	—	—	—	—
253	1708	—	—	—	—	—	—	146	192	61	—	—	140	—	35	47	—	—	—	—	—	—	—	—
254	1743	—	—	—	—	—	—	137	193	66	—	—	136	—	34	56	—	—	—	—	—	—	—	—
329	1685	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
336	1646	1347	1000	720	895	440	70	147	190	63	—	—	134	—	34	44	—	—	—	—	—	—	—	—
351	1785	1468	1129	844	950	482	61	146	196	71	—	—	140	—	34	52	—	—	—	—	—	—	—	—
362	1737	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
376	1752	—	—	—	—	—	—	149	200	69	—	—	141	—	46	48	—	—	—	—	—	—	—	—
385	1709	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
421	1700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
434	1725	1391	1070	800	904	472	70	147	198	66	—	—	142	—	38	45	—	—	—	—	—	—	—	—
456	1728	—	—	—	—	—	—	142	184	61	—	—	141	—	36	44	—	—	—	—	—	—	—	—
474	1749	1425	1089	820	902	464	68	145	188	64	—	—	142	—	35	49	—	—	—	—	—	—	—	—
516	—	—	—	—	—	—	—	141	184	62	104	109	133	101	37	41	114	520	—	—	—	—	—	—
547	—	—	—	—	—	—	—	142	209	73	122	105	139	—	35	53	—	—	—	—	—	—	—	—
651	—	—	—	—	—	—	—	141	192	62	102	106	136	101	35	44	114	541	147	135	105	105	128	111
656	—	—	—	—	—	—	—	143	194	71	119	116	142	—	33	50	—	—	146	137	110	106	129	121
705	—	—	—	—	—	—	—	141	196	67	107	107	137	—	39	46	—	—	144	128	108	108	123	118
707	—	—	—	—	—	—	—	147	194	65	113	106	143	—	37	45	—	—	152	128	106	109	134	125

BENI SUEF (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
772	—	—	—	—	—	—	—	148	200	—	—	—	143	—	—	—	—	—	149	132	105	113	131	123
790	—	—	—	—	—	—	—	146	194	—	—	—	131	—	—	—	—	—	146	139	121	113	134	110
827	—	—	—	—	—	—	—	138	187	57	100	105	135	—	38	39	—	—	143	—	—	—	—	—
837	—	—	—	—	—	—	—	141	192	65	109	113	136	—	38	49	—	—	146	128	105	105	121	114
850	—	—	—	—	—	—	—	143	184	69	114	110	137	—	38	49	—	—	143	132	104	104	125	111
896	—	—	—	—	—	—	—	135	195	72	120	102	138	105	38	51	121	—	140	135	112	122	143	108
972	—	—	—	—	—	—	—	148	196	68	115	114	137	105	35	47	122	—	149	134	109	106	125	124

FAYUM.

41	1725	—	—	—	—	—	—	146	206	68	121	101	138	114	40	53	120	570	—	—	—	—	—	—
71	1590	—	—	—	—	—	—	141	186	68	120	105	135	101	38	53	112	528	—	—	—	—	—	—
115	1720	—	—	—	—	—	—	146	203	69	121	109	142	107	38	50	125	—	—	—	—	—	—	—
138	1752	—	—	—	—	—	—	143	192	63	114	103	135	103	38	47	117	537	—	—	—	—	—	—
209	1700	—	—	—	—	—	—	145	192	68	115	104	139	106	36	48	118	542	—	—	—	—	—	—
276	1692	1353	1035	792	850	432	75	142	192	66	—	—	132	—	35	47	—	—	—	—	—	—	—	—
309	1770	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
339	1735	—	—	—	—	—	—	145	190	69	—	—	135	—	34	46	—	—	—	—	—	—	—	—
365	1712	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
371	1741	1405	1055	786	905	456	58	146	200	67	—	—	142	—	38	47	—	—	—	—	—	—	—	—
382	1652	—	—	—	—	—	—	139	191	71	—	—	141	—	41	49	—	—	—	—	—	—	—	—
417	1755	—	—	—	—	—	—	140	204	72	—	—	138	—	36	52	—	—	—	—	—	—	—	—
468	1750	1456	1100	825	940	475	68	143	186	64	—	—	136	—	36	42	—	—	—	—	—	—	—	—
499	1739	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

FAYUM (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
561	—	—	—	—	—	—	—	143	202	64	109	109	139	—	39	46	—	—	151	—	—	—	—	—
564	—	—	—	—	—	—	—	140	200	69	116	109	138	—	35	48	—	—	153	—	—	—	—	—
593	—	—	—	—	—	—	—	144	198	62	105	105	133	101	36	44	115	542	142	134	112	113	132	120
611	—	—	—	—	—	—	—	147	202	68	114	107	139	103	40	43	122	566	148	144	113	115	134	123
612	—	—	—	—	—	—	—	150	198	74	122	113	145	105	37	47	124	557	150	144	120	118	133	111
617	—	—	—	—	—	—	—	132	189	63	—	104	130	—	32	42	—	—	139	—	—	—	—	—
620	—	—	—	—	—	—	—	147	196	69	113	100	139	—	33	49	—	—	152	139	111	112	129	112
624	—	—	—	—	—	—	—	148	191	71	124	99	139	—	35	52	—	—	146	—	—	—	—	—
652	—	—	—	—	—	—	—	145	185	61	109	110	135	104	34	41	117	532	151	129	104	104	118	114
665	—	—	—	—	—	—	—	149	194	60	106	106	137	—	34	46	—	—	143	138	110	104	123	116
670	—	—	—	—	—	—	—	143	184	70	120	107	138	—	35	50	—	—	146	—	—	—	—	—
672	—	—	—	—	—	—	—	143	186	64	112	108	139	—	34	47	—	—	135	—	—	—	—	—
679	—	—	—	—	—	—	—	147	181	63	106	106	137	—	38	43	—	—	152	—	—	—	—	—
729	—	—	—	—	—	—	—	144	193	—	—	—	—	—	—	—	—	—	152	138	115	113	122	113
756	—	—	—	—	—	—	—	143	198	73	117	117	137	—	38	51	—	—	141	134	114	118	132	118
779	—	—	—	—	—	—	—	150	212	—	—	—	148	—	—	—	—	—	154	140	117	122	133	122
859	—	—	—	—	—	—	—	145	190	68	115	107	136	—	33	46	—	—	146	—	—	—	—	—
866	—	—	—	—	—	—	—	139	196	68	112	108	137	—	39	46	—	—	146	131	107	111	129	121
868	—	—	—	—	—	—	—	140	195	65	111	102	139	—	31	47	—	—	145	139	110	110	129	115
884	—	—	—	—	—	—	—	144	191	67	114	113	137	—	38	47	—	—	144	—	—	—	—	—
910	—	—	—	—	—	—	—	135	197	69	111	107	136	—	37	48	—	—	143	—	—	—	—	—
911	—	—	—	—	—	—	—	142	190	64	110	111	136	99	37	42	117	—	142	131	112	116	132	109
918	—	—	—	—	—	—	—	146	200	68	117	103	133	99	38	50	113	—	150	131	105	107	129	125
937	—	—	—	—	—	—	—	143	202	69	112	106	138	102	41	50	—	—	150	142	113	112	128	118
944	—	—	—	—	—	—	—	141	194	66	117	107	140	101	39	48	—	—	154	—	—	—	—	—

GIZA.

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
11	1730	—	—	—	—	—	—	151	195	63	114	111	143	114	35	54	—	—	—	—	—	—	—	—
52	1700	—	—	—	—	—	—	138	202	68	121	103	139	107	36	52	121	560	—	—	—	—	—	—
55	1692	—	—	—	—	—	—	143	196	68	116	108	134	101	42	52	115	554	—	—	—	—	—	—
83	1690	—	—	—	—	—	—	143	195	62	112	104	132	98	39	48	116	543	—	—	—	—	—	—
105	1745	—	—	—	—	—	—	146	190	70	123	98	133	98	33	58	112	544	—	—	—	—	—	—
106	1712	—	—	—	—	—	—	145	195	66	116	114	148	100	36	51	116	547	—	—	—	—	—	—
107	1713	—	—	—	—	—	—	139	196	67	121	107	133	102	34	49	118	546	—	—	—	—	—	—
131	1707	—	—	—	—	—	—	152	194	67	126	108	145	102	39	52	116	554	—	—	—	—	—	—
157	1716	—	—	—	—	—	—	149	197	71	127	106	147	107	41	50	127	556	—	—	—	—	—	—
165	1745	—	—	—	—	—	—	—	—	69	116	105	137	107	36	49	119	—	—	—	—	—	—	—
179	1694	—	—	—	—	—	—	138	182	62	114	110	141	97	34	48	116	520	—	—	—	—	—	—
201	1768	—	—	—	—	—	—	140	198	64	114	98	136	98	37	50	114	552	—	—	—	—	—	—
224	1534	—	—	—	—	—	—	147	199	59	110	103	144	103	38	44	116	—	—	—	—	—	—	—
230	—	—	—	—	—	—	—	146	200	66	119	114	144	110	36	50	125	—	—	—	—	—	—	—
231	1696	—	—	—	—	—	—	144	188	67	124	108	140	104	34	50	120	535	—	—	—	—	—	—
337	1669	—	—	—	—	—	—	144	201	63	—	—	139	—	37	47	—	—	—	—	—	—	—	—
338	1742	—	—	—	—	—	—	136	191	62	—	—	126	—	30	41	—	—	—	—	—	—	—	—
369	1703	1379	1035	780	885	425	69	141	189	66	—	—	138	—	41	48	—	—	—	—	—	—	—	—
384	1710	—	—	—	—	—	—	146	191	62	—	129	—	—	36	46	—	—	—	—	—	—	—	—
416	1710	1390	1070	809	922	468	58	133	192	60	—	—	136	—	34	46	—	—	—	—	—	—	—	—
440	1725	—	—	—	—	—	—	141	186	63	—	—	137	—	38	49	—	—	—	—	—	—	—	—
482	1691	1375	1040	800	895	448	67	143	191	71	—	—	132	—	34	50	—	—	—	—	—	—	—	—
505	—	—	—	—	—	—	—	143	191	68	116	105	137	—	34	49	—	—	—	—	—	—	—	—
511	—	—	—	—	—	—	—	141	190	64	115	111	142	103	36	46	114	535	139	123	105	114	138	110

GIZA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
529	—	—	—	—	—	—	—	145	206	70	117	117	146	—	37	49	—	—	—	—	—	—	—	—
548	—	—	—	—	—	—	—	141	192	65	109	106	131	—	30	42	—	—	—	—	—	—	—	—
554	—	—	—	—	—	—	—	145	200	63	110	112	142	—	41	44	—	—	143	—	—	—	—	—
568	—	—	—	—	—	—	—	—	—	65	114	113	143	—	36	48	—	—	151	—	—	—	—	—
616	—	—	—	—	—	—	—	143	195	66	112	100	128	—	28	46	—	—	150	133	115	110	113	123
640	—	—	—	—	—	—	—	149	188	63	107	105	138	—	36	44	—	—	142	—	—	—	—	—
642	—	—	—	—	—	—	—	148	199	69	115	109	142	—	40	53	—	—	149	—	—	—	—	—
680	—	—	—	—	—	—	—	150	206	71	118	106	138	—	37	50	—	—	149	—	—	—	—	—
692	—	—	—	—	—	—	—	145	199	59	109	103	134	—	37	43	—	—	158	—	—	—	—	—
701	—	—	—	—	—	—	—	145	186	67	107	101	138	—	35	50	—	—	145	—	—	—	—	—
704	—	—	—	—	—	—	—	143	197	67	112	108	138	103	38	46	120	533	143	133	111	118	132	114
706	—	—	—	—	—	—	—	149	202	64	113	117	142	—	38	44	—	—	147	135	113	112	128	115
717	—	—	—	—	—	—	—	135	186	—	—	—	—	—	—	—	—	—	141	132	112	116	131	105
733	—	—	—	—	—	—	—	143	197	68	121	103	137	—	41	45	—	—	144	127	105	106	129	124
781	—	—	—	—	—	—	—	140	193	—	—	—	139	—	—	—	—	—	157	142	114	107	116	122
782	—	—	—	—	—	—	—	144	188	—	—	—	134	—	—	—	—	—	147	132	107	106	118	127
786	—	—	—	—	—	—	—	136	188	—	—	—	128	—	—	—	—	—	146	129	107	107	118	117
787	—	—	—	—	—	—	—	148	208	—	—	—	135	—	—	—	—	—	155	143	113	113	132	123
792	—	—	—	—	—	—	—	146	197	—	—	—	143	—	—	—	—	—	148	136	115	115	141	120
807	—	—	—	—	—	—	—	143	191	65	112	—	136	—	—	—	—	—	143	127	104	103	127	119
852	—	—	—	—	—	—	—	141	184	68	120	106	135	—	31	48	—	—	142	131	102	105	119	112
855	—	—	—	—	—	—	—	142	205	69	117	107	135	—	36	49	—	—	152	—	—	—	—	—
862	—	—	—	—	—	—	—	149	190	65	111	104	141	—	35	46	—	—	148	—	—	—	—	—
870	—	—	—	—	—	—	—	146	207	67	115	114	138	—	—	—	—	—	140	135	113	118	131	123
872	—	—	—	—	—	—	—	145	196	72	119	109	137	103	36	51	120	557	154	143	115	106	133	120

GIZA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
906	—	—	—	—	—	—	—	142	189	67	113	104	127	—	47	—	—	—	136	126	104	115	130	114
912	—	—	—	—	—	—	—	145	197	72	119	114	136	—	36	54	—	—	147	—	—	—	—	—
920	—	—	—	—	—	—	—	138	194	63	105	109	133	98	32	43	115	—	148	133	111	109	123	117
922	—	—	—	—	—	—	—	141	191	69	111	112	139	—	38	45	—	—	144	—	—	—	—	—
992	—	—	—	—	—	—	—	145	191	61	104	109	130	—	34	44	—	—	145	129	104	107	130	117
994	—	—	—	—	—	—	—	139	196	68	113	112	135	96	34	45	116	—	151	139	113	115	132	118
1002	—	—	—	—	—	—	—	144	199	65	115	110	137	99	36	47	118	—	146	133	112	113	135	120

MENUFIA.

29	1807	—	—	—	—	—	—	140	192	65	120	105	142	104	37	52	115	548	—	—	—	—	—	—
40	1772	—	—	—	—	—	—	148	195	65	123	116	146	109	36	47	111	562	—	—	—	—	—	—
58	1692	—	—	—	—	—	—	145	199	64	113	98	137	107	38	47	115	557	—	—	—	—	—	—
62	—	—	—	—	—	—	—	—	—	64	112	115	137	111	37	54	115	—	—	—	—	—	—	—
78	1700	—	—	—	—	—	—	136	191	61	116	94	127	93	38	48	105	532	—	—	—	—	—	—
88	1730	—	—	—	—	—	—	145	195	67	122	100	139	99	37	52	111	559	—	—	—	—	—	—
98	1790	—	—	—	—	—	—	147	199	75	124	106	144	109	36	55	120	568	—	—	—	—	—	—
104	1727	—	—	—	—	—	—	142	193	69	124	99	141	99	34	51	115	537	—	—	—	—	—	—
110	1760	—	—	—	—	—	—	145	190	66	115	109	128	94	35	55	114	536	—	—	—	—	—	—
125	1730	—	—	—	—	—	—	150	195	66	119	104	136	106	37	49	120	557	—	—	—	—	—	—
129	1790	—	—	—	—	—	—	145	206	74	130	101	138	101	38	54	123	568	—	—	—	—	—	—
133	1738	—	—	—	—	—	—	142	191	58	111	106	136	105	40	46	113	532	—	—	—	—	—	—
139	1707	—	—	—	—	—	—	141	195	71	124	100	133	98	39	54	113	542	—	—	—	—	—	—
153	1771	—	—	—	—	—	—	146	191	66	115	101	134	99	36	49	113	540	—	—	—	—	—	—

MENUFIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
154	1732	—	—	—	—	—	—	147	193	68	115	100	130	98	37	53	118	542	—	—	—	—	—	—
162	1700	—	—	—	—	—	—	150	200	72	127	106	135	106	38	53	116	560	—	—	—	—	—	—
166	1732	—	—	—	—	—	—	142	193	63	112	105	133	104	36	50	120	551	—	—	—	—	—	—
176	1740	—	—	—	—	—	—	149	—	61	112	105	143	105	42	47	123	567	—	—	—	—	—	—
188	1690	—	—	—	—	—	—	139	194	70	118	100	132	105	34	54	122	540	—	—	—	—	—	—
203	1684	—	—	—	—	—	—	152	193	65	118	103	141	104	32	46	120	551	—	—	—	—	—	—
205	1760	—	—	—	—	—	—	145	202	62	115	103	136	100	37	46	112	555	—	—	—	—	—	—
206	1832	—	—	—	—	—	—	152	191	67	119	121	145	111	37	50	117	552	—	—	—	—	—	—
238	—	—	—	—	—	—	—	144	189	61	114	105	138	103	36	47	115	—	—	—	—	—	—	—
265	1721	—	—	—	—	—	—	147	196	63	—	—	144	—	35	50	—	—	—	—	—	—	—	—
268	1753	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
271	1700	1373	1064	762	905	445	50	142	195	65	—	—	141	—	36	50	—	—	—	—	—	—	—	—
278	1743	—	—	—	—	—	—	141	195	59	—	—	146	—	38	50	—	—	—	—	—	—	—	—
286	1741	—	—	—	—	—	—	141	195	60	—	—	140	—	37	48	—	—	—	—	—	—	—	—
293	1708	—	—	—	—	—	—	139	198	61	—	—	142	—	38	49	—	—	—	—	—	—	—	—
304	1708	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
305	1703	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
308	1735	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
335	1600	1308	988	724	840	418	64	148	197	64	—	—	138	—	35	44	—	—	—	—	—	—	—	—
343	1717	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
379	1732	—	—	—	—	—	—	139	195	68	—	—	136	—	35	50	—	—	—	—	—	—	—	—
397	1717	—	—	—	—	—	—	148	197	70	—	—	142	—	38	50	—	—	—	—	—	—	—	—
405	1705	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
408	1709	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
410	1748	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

MENUFIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
415	1747	—	—	—	—	—	—	146	200	69	—	—	139	—	40	51	—	—	—	—	—	—	—	—
418	1754	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
420	1752	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
422	1706	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
423	1725	—	—	—	—	—	—	137	190	63	—	—	135	—	32	45	—	—	—	—	—	—	—	—
424	1727	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
425	1730	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
426	1729	1410	1060	785	940	445	68	139	191	61	—	—	132	—	35	47	—	—	—	—	—	—	—	—
430	1720	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
444	1696	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
457	1788	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
465	1710	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
466	1674	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
475	1750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
488	1703	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
491	1778	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
510	—	—	—	—	—	—	—	143	200	58	109	111	139	—	37	42	—	—	—	—	—	—	—	—
512	—	—	—	—	—	—	—	155	203	64	116	108	145	105	39	47	118	567	—	—	—	—	—	—
531	—	—	—	—	—	—	—	157	194	73	125	113	139	107	37	52	124	567	150	—	—	—	—	—
558	—	—	—	—	—	—	—	145	192	70	118	103	137	—	33	49	—	—	147	—	—	—	—	—
560	—	—	—	—	—	—	—	142	191	68	113	107	135	—	38	49	—	—	150	—	—	—	—	—
563	—	—	—	—	—	—	—	138	186	65	109	108	132	—	37	49	—	—	143	—	—	—	—	—
572	—	—	—	—	—	—	—	141	200	69	119	104	133	—	36	50	—	—	148	—	—	—	—	—
576	—	—	—	—	—	—	—	153	196	72	130	113	137	—	38	48	—	—	153	—	—	—	—	—
589	—	—	—	—	—	—	—	140	—	63	103	106	132	98	34	47	110	541	143	135	110	106	123	116

MENUFIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
600	—	—	—	—	—	—	—	144	191	67	113	107	145	105	35	48	118	540	147	138	115	120	137	113
602	—	—	—	—	—	—	—	149	192	67	115	102	137	—	35	46	—	—	151	137	110	107	125	122
603	—	—	—	—	—	—	—	142	192	63	109	105	135	—	33	42	—	—	148	129	111	110	133	119
604	—	—	—	—	—	—	—	142	200	66	108	113	138	—	39	46	—	—	150	146	116	111	131	117
605	—	—	—	—	—	—	—	147	205	65	111	100	138	—	37	46	—	—	151	131	109	112	133	124
613	—	—	—	—	—	—	—	147	199	64	114	106	134	—	37	47	—	—	147	133	110	111	129	125
614	—	—	—	—	—	—	—	152	196	77	137	104	144	107	38	54	128	563	153	145	115	117	134	127
632	—	—	—	—	—	—	—	148	200	72	116	107	145	—	—	53	—	—	154	—	—	—	—	—
658	—	—	—	—	—	—	—	141	191	68	116	111	137	102	34	47	120	525	145	136	107	108	125	118
663	—	—	—	—	—	—	—	150	197	69	118	111	139	100	35	53	—	—	148	134	109	112	127	122
698	—	—	—	—	—	—	—	148	196	72	118	115	145	—	32	52	—	—	147	—	—	—	—	—
700	—	—	—	—	—	—	—	157	204	66	107	123	148	—	40	51	—	—	155	—	—	—	—	—
702	—	—	—	—	—	—	—	143	193	66	116	111	137	—	39	45	—	—	146	—	—	—	—	—
703	—	—	—	—	—	—	—	145	197	66	111	106	138	—	39	53	—	—	144	134	108	112	128	118
709	—	—	—	—	—	—	—	141	197	64	106	108	138	—	38	45	—	—	149	141	113	113	129	119
711	—	—	—	—	—	—	—	153	192	—	—	—	—	—	—	—	—	—	141	132	108	113	129	115
714	—	—	—	—	—	—	—	138	184	61	109	105	128	—	36	41	—	—	150	131	103	107	124	112
718	—	—	—	—	—	—	—	147	195	58	104	112	133	—	38	38	—	—	141	136	111	120	133	103
720	—	—	—	—	—	—	—	146	200	—	—	—	—	—	—	—	—	—	145	128	106	111	132	120
722	—	—	—	—	—	—	—	146	196	—	—	—	—	—	—	—	—	—	155	138	116	115	125	111
723	—	—	—	—	—	—	—	146	198	—	—	—	—	—	—	—	—	—	156	138	113	111	127	128
724	—	—	—	—	—	—	—	147	196	—	—	—	—	—	—	—	—	—	141	130	112	113	133	116
725	—	—	—	—	—	—	—	146	200	—	—	—	—	—	—	—	—	—	152	141	115	111	124	117
726	—	—	—	—	—	—	—	142	189	—	—	—	—	—	—	—	—	—	146	133	113	112	128	111
736	—	—	—	—	—	—	—	149	197	66	114	106	146	—	37	46	—	—	153	138	113	111	131	132

MENUFIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
754	—	—	—	—	—	—	—	150	193	67	117	118	144	—	38	44	—	—	153	139	117	116	137	107
762	—	—	—	—	—	—	—	148	194	65	113	114	142	—	41	46	—	—	149	132	113	122	136	114
765	—	—	—	—	—	—	—	136	194	68	114	102	126	—	35	52	—	—	142	—	—	—	—	—
768	—	—	—	—	—	—	—	146	199	68	110	112	133	—	38	47	—	—	158	—	—	—	—	—
769	—	—	—	—	—	—	—	145	202	69	117	116	141	—	37	45	—	—	156	—	—	—	—	—
773	—	—	—	—	—	—	—	155	194	—	—	—	141	—	—	—	—	—	148	137	110	112	135	121
774	—	—	—	—	—	—	—	137	205	—	—	—	133	—	—	—	—	—	154	140	112	114	132	127
780	—	—	—	—	—	—	—	146	197	—	—	—	135	—	—	—	—	—	157	146	113	110	129	113
788	—	—	—	—	—	—	—	149	194	—	—	—	139	—	—	—	—	—	143	128	106	108	129	116
806	—	—	—	—	—	—	—	148	203	—	—	—	145	—	—	—	—	—	143	132	108	108	128	126
830	—	—	—	—	—	—	—	141	203	66	111	109	136	—	38	46	—	—	147	135	112	119	130	118
832	—	—	—	—	—	—	—	147	196	60	108	117	146	105	42	47	123	556	143	131	108	109	133	121
853	—	—	—	—	—	—	—	138	193	—	—	104	133	—	—	—	—	—	147	—	—	—	—	—
883	—	—	—	—	—	—	—	144	196	61	106	114	139	—	40	43	—	—	142	—	—	—	—	—
891	—	—	—	—	—	—	—	145	189	66	116	105	134	—	35	46	—	—	143	—	—	—	—	—
905	—	—	—	—	—	—	—	145	194	66	115	104	135	—	35	48	—	—	147	—	—	—	—	—
907	—	—	—	—	—	—	—	146	197	70	127	108	139	—	39	49	—	—	142	133	111	115	140	113
941	—	—	—	—	—	—	—	141	198	69	113	113	138	—	38	48	—	—	141	—	—	—	—	—
942	—	—	—	—	—	—	—	141	187	59	100	108	134	94	37	45	—	—	141	127	110	110	132	119
943	—	—	—	—	—	—	—	146	194	72	112	108	141	—	34	48	—	—	148	—	—	—	—	—
949	—	—	—	—	—	—	—	139	205	65	113	110	133	—	41	50	—	—	148	—	—	—	—	—
950	—	—	—	—	—	—	—	146	196	66	116	110	142	—	39	43	—	—	143	—	—	—	—	—
983	—	—	—	—	—	—	—	153	200	67	110	102	137	—	38	48	—	—	146	—	—	—	—	—
991	—	—	—	—	—	—	—	145	196	62	108	106	136	—	38	46	—	—	149	—	—	—	—	—
999	—	—	—	—	—	—	—	151	199	68	108	110	141	—	38	53	—	—	154	143	118	109	121	118
1000	—	—	—	—	—	—	—	143	200	67	112	111	139	—	39	49	—	—	146	134	112	117	133	120

KALIUBIA.

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
119	1727	—	—	—	—	—	—	142	192	61	111	110	136	100	38	47	116	535	—	—	—	—	—	—
216	1708	—	—	—	—	—	—	140	185	64	112	103	134	92	32	51	106	526	—	—	—	—	—	—
255	1735	—	—	—	—	—	—	153	205	71	—	—	143	—	34	55	—	—	—	—	—	—	—	—
366	1697	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
370	1721	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
373	1730	1393	1056	785	920	454	65	146	195	68	—	—	137	—	35	46	—	—	—	—	—	—	—	—
404	1733	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
412	1749	1316	993	764	812	423	60	145	196	60	—	—	139	—	43	43	—	—	—	—	—	—	—	—
450	1700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
467	1704	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
483	1732	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
532	—	—	—	—	—	—	—	143	202	66	109	109	142	101	35	45	116	555	149	136	112	114	124	117
634	—	—	—	—	—	—	—	141	189	64	112	96	129	—	35	43	—	—	142	—	—	—	—	—
641	—	—	—	—	—	—	—	141	192	63	106	110	136	—	38	46	—	—	148	—	—	—	—	—
699	—	—	—	—	—	—	—	145	202	67	116	105	134	—	37	47	—	—	145	—	—	—	—	—
741	—	—	—	—	—	—	—	140	195	63	101	106	133	—	—	—	—	—	147	138	113	108	127	121
758	—	—	—	—	—	—	—	147	195	65	112	109	134	—	37	49	—	—	151	134	109	108	129	121
760	—	—	—	—	—	—	—	137	187	61	111	104	128	—	38	46	—	—	154	—	—	—	—	—
764	—	—	—	—	—	—	—	147	199	58	102	108	141	—	35	41	—	—	153	—	—	—	—	—
771	—	—	—	—	—	—	—	143	193	—	—	—	—	—	—	—	—	—	152	133	111	112	127	120
784	—	—	—	—	—	—	—	143	203	—	—	—	139	—	—	—	—	—	149	134	112	111	136	125
818	—	—	—	—	—	—	—	141	182	64	107	107	136	—	—	—	—	—	135	125	104	109	122	113
869	—	—	—	—	—	—	—	135	191	65	109	106	133	—	33	46	—	—	144	—	—	—	—	—
897	—	—	—	—	—	—	—	149	194	63	104	115	149	105	37	42	121	—	148	132	115	117	132	119

KALIUBIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
899	—	—	—	—	—	—	—	143	182	60	103	113	136	—	36	41	—	—	145	134	105	110	126	107
908	—	—	—	—	—	—	—	148	194	63	108	111	141	—	35	44	—	—	148	135	105	103	127	119
919	—	—	—	—	—	—	—	143	183	63	109	104	139	—	33	44	110	—	134	129	104	111	130	107
975	—	—	—	—	—	—	—	147	196	67	116	107	136	102	34	49	122	—	151	137	107	110	125	127

SHARĶIA.

6	1710	—	—	—	—	—	—	143	199	64	111	105	129	103	38	48	122	552	—	—	—	—	—	—
23	1650	—	—	—	—	—	—	144	204	64	119	111	136	108	38	44	119	572	—	—	—	—	—	—
36	1723	—	—	—	—	—	—	143	189	63	116	107	136	106	40	52	113	533	—	—	—	—	—	—
100	1726	—	—	—	—	—	—	155	194	63	124	116	148	104	40	53	120	556	—	—	—	—	—	—
132	1737	—	—	—	—	—	—	147	190	62	113	106	136	103	34	44	113	547	—	—	—	—	—	—
144	1704	—	—	—	—	—	—	142	199	66	119	99	136	98	37	54	115	560	—	—	—	—	—	—
223	1713	—	—	—	—	—	—	148	200	65	118	112	145	107	36	46	129	556	—	—	—	—	—	—
288	1715	—	—	—	—	—	—	153	189	63	—	—	146	—	37	48	—	—	—	—	—	—	—	—
289	1734	—	—	—	—	—	—	147	196	67	—	—	141	—	37	46	—	—	—	—	—	—	—	—
523	—	—	—	—	—	—	—	140	188	65	109	98	130	93	34	47	105	530	—	—	—	—	—	—
635	—	—	—	—	—	—	—	141	195	65	112	103	136	—	37	45	—	—	147	—	—	—	—	—
678	—	—	—	—	—	—	—	135	197	64	108	105	137	—	37	49	—	—	147	—	—	—	—	—
766	—	—	—	—	—	—	—	151	205	69	118	113	138	—	38	54	—	—	159	—	—	—	—	—
789	—	—	—	—	—	—	—	146	194	—	—	—	133	—	—	—	—	—	149	138	114	111	133	116
895	—	—	—	—	—	—	—	147	200	64	109	114	138	—	39	46	—	—	141	—	—	—	—	—
932	—	—	—	—	—	—	—	140	201	64	110	106	133	—	38	45	—	—	145	134	114	117	129	122

SHARḲIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
939	—	—	—	—	—	—	—	143	197	68	113	108	136	99	33	50	116	—	145	134	109	108	131	119
958	—	—	—	—	—	—	—	142	197	72	122	108	134	102	39	50	—	—	145	138	113	111	125	153
959	—	—	—	—	—	—	—	152	203	68	115	114	143	98	35	46	118	—	141	135	113	114	132	119
993	—	—	—	—	—	—	—	149	198	66	108	101	137	102	32	47	121	—	146	128	106	108	121	127

BAHEIRA.

1	1785	1448	1083	796	968	500	78	149	200	68	110	107	144	107	50	34	115	561	—	—	—	—	—	—
17	1730	—	—	—	—	—	—	148	199	66	114	113	138	108	34	48	120	555	—	—	—	—	—	—
28	1725	—	—	—	—	—	—	141	198	56	—	97	136	97	34	47	112	555	—	—	—	—	—	—
51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
80	1675	—	—	—	—	—	—	143	198	65	114	99	131	104	34	48	123	555	—	—	—	—	—	—
82	1750	—	—	—	—	—	—	141	199	78	124	112	137	106	37	53	118	553	—	—	—	—	—	—
141	1690	—	—	—	—	—	—	143	207	67	111	107	133	100	35	47	115	556	—	—	—	—	—	—
148	1788	—	—	—	—	—	—	137	195	70	124	108	134	105	34	47	115	533	—	—	—	—	—	—
167	1708	—	—	—	—	—	—	147	192	70	113	96	132	100	33	52	117	542	—	—	—	—	—	—
202	1618	—	—	—	—	—	—	141	189	66	112	98	133	99	34	50	114	533	—	—	—	—	—	—
225	1772	—	—	—	—	—	—	142	211	73	122	110	143	104	36	52	—	—	—	—	—	—	—	—
228	—	—	—	—	—	—	—	150	202	74	118	105	140	103	35	53	116	—	—	—	—	—	—	—
248	1732	—	—	—	—	—	—	143	194	76	129	106	134	102	35	53	120	542	—	—	—	—	—	—
259	1714	—	—	—	—	—	—	140	186	69	—	—	133	—	33	51	—	—	—	—	—	—	—	—
266	1730	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
277	1732	1378	1051	790	930	478	70	152	205	73	—	114	139	—	36	52	—	—	—	—	—	—	—	—

BAHEIRA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
280	1713	—	—	—	—	—	—	149	197	64	—	—	135	—	37	46	—	—	—	—	—	—	—	—
303	1780	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
307	1744	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
310	1730	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
315	1747	1422	1056	779	922	450	78	152	189	63	—	—	137	—	33	47	—	—	—	—	—	—	—	—
341	1703	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
388	1747	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
407	1724	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
463	1715	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
471	1707	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
480	1702	—	—	—	—	—	—	147	189	68	—	—	137	—	37	53	—	—	—	—	—	—	—	—
489	1704	—	—	—	—	—	—	138	183	59	—	—	133	—	34	44	—	—	—	—	—	—	—	—
508	—	—	—	—	—	—	—	142	191	68	111	109	133	—	35	47	—	—	—	—	—	—	—	—
515	—	—	—	—	—	—	—	138	190	68	119	106	132	98	36	45	116	528	—	—	—	—	—	—
525	—	—	—	—	—	—	—	139	202	66	114	108	137	—	38	49	—	—	—	—	—	—	—	—
643	—	—	—	—	—	—	—	149	194	65	107	109	139	—	37	50	—	—	144	—	—	—	—	—
646	—	—	—	—	—	—	—	150	201	69	122	115	140	—	42	50	—	—	152	—	—	—	—	—
675	—	—	—	—	—	—	—	143	206	71	112	105	134	—	33	51	—	—	150	—	—	—	—	—
677	—	—	—	—	—	—	—	143	204	71	119	107	139	—	38	48	—	—	148	—	—	—	—	—
686	—	—	—	—	—	—	—	145	206	69	121	113	141	—	36	48	—	—	148	—	—	—	—	—
713	—	—	—	—	—	—	—	148	190	—	—	—	—	—	—	—	—	—	151	138	111	106	121	121
715	—	—	—	—	—	—	—	149	200	61	109	115	137	—	39	45	—	—	146	—	—	—	—	—
745	—	—	—	—	—	—	—	145	188	65	108	107	136	—	39	42	—	—	153	139	110	108	121	120
748	—	—	—	—	—	—	—	151	190	64	108	112	144	—	35	44	—	—	148	135	111	112	134	111
749	—	—	—	—	—	—	—	142	191	65	112	98	135	—	34	47	—	—	146	130	107	107	132	119

BAHEIRA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
750	—	—	—	—	—	—	—	150	203	—	—	—	—	—	—	—	—	—	151	135	109	106	129	129
809	—	—	—	—	—	—	—	140	190	69	112	107	137	—	—	—	—	—	142	132	108	116	130	114
819	—	—	—	—	—	—	—	147	195	67	116	110	137	—	37	46	—	—	144	137	116	116	129	113
822	—	—	—	—	—	—	—	146	193	69	118	—	138	—	—	—	—	—	143	133	105	103	128	124
833	—	—	—	—	—	—	—	143	195	65	112	109	142	—	38	47	—	—	145	132	107	113	137	117
838	—	—	—	—	—	—	—	141	191	66	114	106	134	—	34	51	—	—	138	131	110	109	127	112
841	—	—	—	—	—	—	—	150	205	64	111	109	144	—	39	46	—	—	151	139	113	109	123	123
845	—	—	—	—	—	—	—	142	201	64	110	112	135	—	41	50	—	—	149	129	106	109	130	128
848	—	—	—	—	—	—	—	139	196	57	104	101	134	—	35	45	—	—	142	129	107	106	126	117
887	—	—	—	—	—	—	—	148	205	64	103	110	137	—	35	44	—	—	154	—	—	—	—	—
913	—	—	—	—	—	—	—	141	200	63	106	108	137	—	36	46	—	—	146	131	107	108	127	126
914	—	—	—	—	—	—	—	138	203	71	113	110	140	—	36	46	—	—	147	—	—	—	—	—
934	—	—	—	—	—	—	—	150	195	68	116	115	141	—	35	47	—	—	151	—	—	—	—	—
961	—	—	—	—	—	—	—	144	196	72	118	113	135	96	34	52	114	—	145	131	111	110	130	118
977	—	—	—	—	—	—	—	140	196	67	118	110	138	106	34	50	123	—	145	130	114	121	139	120
981	—	—	—	—	—	—	—	145	189	63	110	114	139	—	36	46	—	—	142	127	106	107	127	115
984	—	—	—	—	—	—	—	151	201	64	109	121	141	—	34	49	—	—	140	—	—	—	—	—
987	—	—	—	—	—	—	—	137	205	71	118	108	137	105	39	48	118	—	151	136	113	115	128	130
1003	—	—	—	—	—	—	—	140	196	72	116	107	138	—	34	51	—	—	142	132	110	114	125	121

GHARBIA.

10	1677	—	—	—	—	—	—	143	192	63	110	112	139	106	36	49	111	539	—	—	—	—	—	—
18	1715	—	—	—	—	—	—	142	186	65	114	108	136	108	34	49	121	525	—	—	—	—	—	—
20	1719	—	—	—	—	—	—	149	197	66	118	110	140	105	38	53	117	550	—	—	—	—	—	—

GHARBIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
24	1752	—	—	—	—	—	—	144	193	63	112	97	133	104	42	48	116	540	—	—	—	—	—	—
27	1700	—	—	—	—	—	—	153	185	60	108	103	138	106	38	47	116	542	—	—	—	—	—	—
30	1690	—	—	—	—	—	—	153	185	70	119	108	139	104	41	54	111	549	—	—	—	—	—	—
47	1766	—	—	—	—	—	—	149	183	63	108	93	136	103	34	52	114	534	—	—	—	—	—	—
50	1690	—	—	—	—	—	—	151	197	77	124	111	145	111	38	53	115	558	—	—	—	—	—	—
53	1715	—	—	—	—	—	—	151	196	69	122	116	143	110	37	52	120	558	—	—	—	—	—	—
60	1700	—	—	—	—	—	—	136	192	63	111	100	136	100	36	47	113	542	—	—	—	—	—	—
63	1702	—	—	—	—	—	—	144	179	64	114	102	133	98	36	51	108	532	—	—	—	—	—	—
66	1723	—	—	—	—	—	—	147	191	55	109	113	143	106	45	40	113	542	—	—	—	—	—	—
84	1680	—	—	—	—	—	—	149	205	64	114	101	141	104	35	49	118	572	—	—	—	—	—	—
89	1744	—	—	—	—	—	—	139	192	61	111	94	131	96	36	45	115	533	—	—	—	—	—	—
94	1683	—	—	—	—	—	—	147	199	72	121	109	142	109	38	55	114	568	—	—	—	—	—	—
95	1730	—	—	—	—	—	—	146	200	68	118	114	147	109	39	47	121	556	—	—	—	—	—	—
111	1744	—	—	—	—	—	—	143	194	62	113	106	135	105	39	46	123	537	—	—	—	—	—	—
114	1708	—	—	—	—	—	—	147	202	79	127	99	139	105	43	54	123	571	—	—	—	—	—	—
117	1715	—	—	—	—	—	—	140	192	68	121	99	138	108	38	51	114	542	—	—	—	—	—	—
134	1700	—	—	—	—	—	—	146	198	59	106	101	140	100	38	48	116	556	—	—	—	—	—	—
135	1724	—	—	—	—	—	—	144	193	69	116	98	135	100	34	47	116	541	—	—	—	—	—	—
149	1740	—	—	—	—	—	—	145	198	66	123	97	143	103	41	48	113	555	—	—	—	—	—	—
152	1732	—	—	—	—	—	—	151	188	65	118	105	143	100	34	51	110	548	—	—	—	—	—	—
164	1713	—	—	—	—	—	—	143	181	63	108	116	137	100	33	49	114	520	—	—	—	—	—	—
170	1730	—	—	—	—	—	—	140	196	72	125	94	133	98	35	53	113	550	—	—	—	—	—	—
178	1704	—	—	—	—	—	—	154	196	67	118	102	144	101	36	52	113	570	—	—	—	—	—	—
185	1722	—	—	—	—	—	—	146	195	67	117	105	136	99	32	48	113	548	—	—	—	—	—	—
190 *bis*	—	—	—	—	—	—	—	143	186	68	115	96	130	100	35	50	114	—	—	—	—	—	—	—

GHARBIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
193	1702	—	—	—	—	—	—	146	185	64	112	104	133	96	33	50	110	537	—	—	—	—	—	—
194	1700	—	—	—	—	—	—	153	200	69	126	103	142	97	32	52	115	565	—	—	—	—	—	—
195	1710	—	—	—	—	—	—	150	192	62	118	108	139	95	33	54	117	553	—	—	—	—	—	—
196	1692	—	—	—	—	—	—	151	194	70	124	116	148	112	36	55	126	558	—	—	—	—	—	—
204	1708	—	—	—	—	—	—	137	186	62	110	106	136	101	36	45	115	528	—	—	—	—	—	—
212	1768	—	—	—	—	—	—	145	197	64	114	116	141	111	37	51	126	555	—	—	—	—	—	—
215	1720	—	—	—	—	—	—	139	189	66	113	110	136	101	34	51	113	—	—	—	—	—	—	—
218	1713	—	—	—	—	—	—	142	191	63	110	92	130	94	35	53	110	—	—	—	—	—	—	—
219	1713	—	—	—	—	—	—	141	195	62	118	110	133	104	39	47	120	544	—	—	—	—	—	—
226	1694	—	—	—	—	—	—	155	197	69	128	114	148	109	41	52	123	—	—	—	—	—	—	—
232	1763	—	—	—	—	—	—	145	193	64	113	113	142	103	38	52	117	—	—	—	—	—	—	—
245	—	—	—	—	—	—	—	148	191	63	117	100	134	90	40	53	108	—	—	—	—	—	—	—
250	—	—	—	—	—	—	—	142	197	68	118	107	133	93	34	49	114	550	—	—	—	—	—	—
252	1737	1400	1043	790	905	443	80	141	189	69	—	—	132	—	37	54	—	—	—	—	—	—	—	—
273	1722	1375	1055	794	930	450	70	143	188	67	—	—	128	—	34	52	—	—	—	—	—	—	—	—
275	1785	1450	1135	840	950	490	70	148	193	62	—	—	140	—	39	47	—	—	—	—	—	—	—	—
283	1710	—	—	—	—	—	—	143	201	65	—	—	145	—	39	47	—	—	—	—	—	—	—	—
296	1700	1371	1053	775	891	422	68	146	183	65	—	—	144	—	35	51	—	—	—	—	—	—	—	—
297	1695	1345	1020	748	860	439	57	145	197	68	—	—	137	—	37	52	—	—	—	—	—	—	—	—
316	1735	1419	1077	815	928	455	67	146	198	67	—	—	142	—	36	50	—	—	—	—	—	—	—	—
317	1687	—	—	—	—	—	—	140	193	65	—	—	132	—	36	46	—	—	—	—	—	—	—	—
325	1673	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
331	1628	1304	985	740	840	432	68	140	190	69	—	—	136	—	32	47	—	—	—	—	—	—	—	—
332	1656	1353	1043	785	880	415	58	144	190	64	—	—	141	—	33	45	—	—	—	—	—	—	—	—
333	1583	1265	948	694	812	417	65	143	191	60	—	—	133	—	35	46	—	—	—	—	—	—	—	—

GHARBIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
340	1705	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
347	1745	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
350	1688	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
367	1725	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
368	1725	1395	1070	814	915	454	68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
372	1722	1390	1040	792	940	474	60	139	185	68	—	—	136	—	37	48	—	—	—	—	—	—	—	—
374	1705	1388	1036	772	925	470	58	135	185	68	—	—	132	—	31	53	—	—	—	—	—	—	—	—
396	1710	—	—	—	—	—	—	142	191	69	—	—	138	—	33	45	—	—	—	—	—	—	—	—
402	1727	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
413	1772	—	—	—	—	—	—	145	—	72	—	—	139	—	33	52	—	—	—	—	—	—	—	—
427	1718	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
429	1710	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
431	1747	1394	1060	800	898	455	63	144	197	67	—	—	137	—	38	51	—	—	—	—	—	—	—	—
441	1705	1357	1012	759	885	450	60	139	200	66	—	—	137	—	34	46	—	—	—	—	—	—	—	—
442	1744	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
447	1839	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
451	1763	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
453	1679	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
464	1751	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
472	1776	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
473	1698	—	—	—	—	—	—	158	190	66	—	—	151	—	41	53	—	—	—	—	—	—	—	—
486	1699	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
493	1726	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
495	1714	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
497	1690	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

GHARBIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
500	1724	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
504	—	—	—	—	—	—	—	146	189	67	117	113	136	100	33	46	114	533	147	129	108	112	129	107
509	—	—	—	—	—	—	—	135	195	64	113	104	135	—	40	46	—	—	—	—	—	—	—	—
518	—	—	—	—	—	—	—	150	190	67	120	107	134	97	35	49	112	550	—	—	—	—	—	—
524	—	—	—	—	—	—	—	144	200	68	123	109	142	—	36	51	—	—	—	—	—	—	—	—
533	—	—	—	—	—	—	—	153	204	75	126	108	144	105	35	54	127	575	159	137	114	115	125	114
551	—	—	—	—	—	—	—	152	202	67	116	112	148	—	36	45	—	—	149	—	—	—	—	—
553	—	—	—	—	—	—	—	140	201	72	115	108	129	—	38	50	—	—	143	—	—	—	—	—
556	—	—	—	—	—	—	—	146	191	66	113	106	135	—	37	46	—	—	146	—	—	—	—	—
577	—	—	—	—	—	—	—	142	195	64	114	108	144	—	33	47	—	—	153	—	—	—	—	—
594	—	—	—	—	—	—	—	151	193	65	116	106	150	107	36	43	119	552	154	137	113	109	129	117
606	—	—	—	—	—	—	—	150	197	65	113	109	140	—	31	47	—	—	141	133	112	114	130	119
610	—	—	—	—	—	—	—	152	189	72	124	104	133	—	34	51	—	—	153	—	—	—	—	—
622	—	—	—	—	—	—	—	148	189	67	119	99	133	—	34	47	—	—	150	—	—	—	—	—
627	—	—	—	—	—	—	—	141	186	58	105	104	139	—	35	50	—	—	144	—	—	—	—	—
654	—	—	—	—	—	—	—	151	202	67	110	108	137	100	38	43	119	561	153	139	115	117	132	115
657	—	—	—	—	—	—	—	141	203	70	117	111	145	—	40	47	—	—	151	138	114	115	133	124
660	—	—	—	—	—	—	—	141	199	72	122	106	132	—	39	51	—	—	143	132	107	116	139	121
667	—	—	—	—	—	—	—	135	190	66	113	103	126	—	34	47	—	—	143	—	—	—	—	—
669	—	—	—	—	—	—	—	149	194	70	117	107	140	—	34	50	—	—	145	—	—	—	—	—
685	—	—	—	—	—	—	—	150	205	64	115	110	139	—	35	48	—	—	145	—	—	—	—	—
687	—	—	—	—	—	—	—	142	199	67	114	104	136	—	36	48	—	—	147	—	—	—	—	—
688	—	—	—	—	—	—	—	146	195	71	116	108	138	—	36	50	—	—	142	—	—	—	—	—
697	—	—	—	—	—	—	—	138	194	65	111	109	129	—	41	41	—	—	145	—	—	—	—	—
716	—	—	—	—	—	—	—	145	198	—	—	—	—	—	—	—	—	—	142	134	115	116	138	120

GHARBIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
727	—	—	—	—	—	—	—	146	196	—	—	—	—	—	—	—	—	—	145	135	112	110	129	116
728	—	—	—	—	—	—	—	144	197	—	—	—	—	—	—	—	—	—	147	135	115	116	133	116
737	—	—	—	—	—	—	—	151	201	58	106	109	135	—	33	41	—	—	149	141	113	110	130	122
744	—	—	—	—	—	—	—	144	204	70	122	111	134	—	35	50	—	—	143	138	115	121	139	126
746	—	—	—	—	—	—	—	141	193	66	113	103	135	—	—	—	—	—	149	137	110	110	127	120
751	—	—	—	—	—	—	—	143	193	66	111	99	134	—	—	—	—	—	151	134	109	106	124	124
797	—	—	—	—	—	—	—	155	193	—	—	—	141	—	—	—	—	—	154	138	115	111	133	118
798	—	—	—	—	—	—	—	139	183	—	—	—	128	—	—	—	—	—	134	123	107	112	131	105
802	—	—	—	—	—	—	—	147	197	—	—	—	142	—	—	—	—	—	153	139	113	115	127	128
810	—	—	—	—	—	—	—	143	187	68	114	106	139	—	—	—	—	—	141	123	107	109	125	112
815	—	—	—	—	—	—	—	148	196	65	113	104	141	—	36	46	—	—	145	135	105	113	133	123
820	—	—	—	—	—	—	—	144	189	72	115	108	136	—	36	52	—	—	142	132	109	111	135	112
823	—	—	—	—	—	—	—	151	200	71	117	115	145	106	33	53	123	—	143	135	112	113	135	117
825	—	—	—	—	—	—	—	145	186	63	111	—	133	—	38	50	—	—	150	—	—	—	—	—
834	—	—	—	—	—	—	—	144	194	67	111	102	130	96	32	48	108	542	145	132	106	106	128	116
844	—	—	—	—	—	—	—	142	198	66	114	114	141	—	33	48	—	—	151	—	—	—	—	—
854	—	—	—	—	—	—	—	145	197	66	116	120	145	—	35	45	—	—	143	132	111	113	133	115
867	—	—	—	—	—	—	—	149	195	63	116	115	143	—	38	46	—	—	146	—	—	—	—	—
871	—	—	—	—	—	—	—	146	197	64	112	103	143	—	36	45	—	—	146	—	—	—	—	—
874	—	—	—	—	—	—	—	144	194	71	121	105	139	—	30	51	—	—	140	—	—	—	—	—
877	—	—	—	—	—	—	—	142	196	64	106	114	139	—	37	49	—	—	140	—	—	—	—	—
886	—	—	—	—	—	—	—	142	189	68	116	106	138	—	—	—	—	—	142	—	—	—	—	—
925	—	—	—	—	—	—	—	146	194	64	112	106	135	—	38	45	—	—	139	—	—	—	—	—
931	—	—	—	—	—	—	—	149	191	68	112	107	137	—	36	44	—	—	142	—	—	—	—	—
936	—	—	—	—	—	—	—	143	199	68	116	113	138	101	41	49	116	—	145	132	106	114	131	126

GHARBIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
957	—	—	—	—	—	—	—	146	196	63	111	117	138	102	38	46	124	—	147	139	116	114	131	116
968	—	—	—	—	—	—	—	144	195	62	103	113	142	—	38	47	—	—	144	—	—	—	—	—
970	—	—	—	—	—	—	—	148	198	66	111	104	142	—	—	—	—	—	140	—	—	—	—	—
976	—	—	—	—	—	—	—	141	194	67	115	106	139	—	—	—	—	—	149	132	110	114	134	122
990	—	—	—	—	—	—	—	141	190	69	114	108	130	101	35	51	119	—	146	126	103	106	131	125
995	—	—	—	—	—	—	—	137	189	69	120	113	136	102	35	46	118	—	136	131	115	116	140	107

DAḲAHLIA.

2	1717	1406	1043	815	1090	410	28	135	186	65	106	114	132	107	36	50	120	528	—	—	—	—	—	—
4	1793	1430	1094	924	957	469	27	146	203	78	129	105	138	116	35	54	131	572	—	—	—	—	—	—
7	1734	—	—	—	—	—	—	156	190	69	114	104	138	114	31	52	123	563	—	—	—	—	—	—
8	1720	—	—	—	—	—	—	148	202	75	133	117	138	107	38	57	120	565	—	—	—	—	—	—
12	1750	—	—	—	—	—	—	139	185	63	113	108	134	109	36	49	113	530	—	—	—	—	—	—
14	1751	—	—	—	—	—	—	144	197	72	126	118	143	108	39	56	119	552	—	—	—	—	—	—
15	1732	—	—	—	—	—	—	147	190	64	118	123	143	113	36	48	118	542	—	—	—	—	—	—
16	1710	—	—	—	—	—	—	140	193	69	118	107	137	108	34	48	113	535	—	—	—	—	—	—
19	1718	—	—	—	—	—	—	157	196	61	107	114	146	106	39	43	114	566	—	—	—	—	—	—
22	1686	—	—	—	—	—	—	140	190	63	113	104	142	112	35	44	124	538	—	—	—	—	—	—
32	1730	—	—	—	—	—	—	147	190	73	119	102	143	104	33	45	113	547	—	—	—	—	—	—
39	1753	—	—	—	—	—	—	150	194	65	123	110	144	104	37	50	118	545	—	—	—	—	—	—
43	1725	—	—	—	—	—	—	139	190	68	119	97	136	105	35	53	118	535	—	—	—	—	—	—
45	1714	—	—	—	—	—	—	141	188	73	124	99	132	105	39	58	116	532	—	—	—	—	—	—
67	1755	—	—	—	—	—	—	146	199	67	118	109	136	101	38	53	115	558	—	—	—	—	—	—

DAḲAHLIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
68	1700	—	—	—	—	—	—	146	195	58	108	106	139	105	41	48	125	550	—	—	—	—	—	—
81	1770	—	—	—	—	—	—	148	203	65	121	105	138	100	37	47	113	568	—	—	—	—	—	—
85	1707	—	—	—	—	—	—	142	199	70	126	96	136	103	36	54	117	549	—	—	—	—	—	—
97	1718	—	—	—	—	—	—	143	190	64	109	103	137	101	37	49	112	534	—	—	—	—	—	—
102	1745	—	—	—	—	—	—	140	189	63	108	103	134	99	36	50	114	526	—	—	—	—	—	—
113	1693	—	—	—	—	—	—	150	196	65	118	105	144	109	36	47	117	552	—	—	—	—	—	—
116	1710	—	—	—	—	—	—	150	195	64	114	106	139	102	37	53	120	549	—	—	—	—	—	—
140	1790	—	—	—	—	—	—	150	204	69	124	101	136	99	34	51	114	571	—	—	—	—	—	—
142	1701	—	—	—	—	—	—	147	200	65	109	109	136	98	37	47	110	559	—	—	—	—	—	—
150	1680	—	—	—	—	—	—	151	189	59	105	106	139	99	37	50	108	550	—	—	—	—	—	—
151	1760	—	—	—	—	—	—	147	197	69	121	111	146	105	38	53	121	560	—	—	—	—	—	—
158	1708	—	—	—	—	—	—	145	198	67	119	113	137	102	37	52	118	550	—	—	—	—	—	—
159	1704	—	—	—	—	—	—	145	192	68	120	107	141	100	39	52	114	543	—	—	—	—	—	—
161	1723	—	—	—	—	—	—	145	203	72	124	101	137	102	37	53	118	552	—	—	—	—	—	—
175	1725	—	—	—	—	—	—	146	197	62	114	—	142	102	34	50	112	554	—	—	—	—	—	—
181	1705	—	—	—	—	—	—	151	187	71	120	114	150	112	37	52	124	542	—	—	—	—	—	—
184	1758	—	—	—	—	—	—	145	197	65	116	98	137	103	33	51	120	552	—	—	—	—	—	—
221	1755	—	—	—	—	—	—	138	196	69	124	106	133	102	34	51	118	542	—	—	—	—	—	—
233	1739	—	—	—	—	—	—	146	199	63	117	100	139	103	34	47	122	—	—	—	—	—	—	—
241	—	—	—	—	—	—	—	153	189	65	125	109	147	100	36	53	113	—	—	—	—	—	—	—
249	1707	—	—	—	—	—	—	131	189	65	113	94	128	93	32	52	106	521	—	—	—	—	—	—
279	1732	—	—	—	—	—	—	150	200	64	—	—	137	—	36	47	—	—	—	—	—	—	—	—
282	1717	—	—	—	—	—	—	143	196	63	—	—	142	—	35	50	—	—	—	—	—	—	—	—
290	1737	—	—	—	—	—	—	152	201	72	—	—	140	—	34	55	—	—	—	—	—	—	—	—
298	1720	—	—	—	—	—	—	141	190	58	—	—	139	—	33	47	—	—	—	—	—	—	—	—

DAḲAHLIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
311	1736	1410	1106	828	923	478	70	152	191	75	—	—	140	—	34	54	—	—	—	—	—	—	—	—
319	1715	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
320	1721	—	—	—	—	—	—	149	191	66	—	—	138	—	35	46	—	—	—	—	—	—	—	—
334	1766	1374	1004	756	860	460	73	146	200	66	—	—	135	—	34	47	—	—	—	—	—	—	—	—
345	1695	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
354	1741	1405	1061	800	913	483	70	139	201	74	—	—	136	—	43	52	—	—	—	—	—	—	—	—
356	1736	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
357	1788	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
359	1701	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
360	1798	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
377	1697	1350	1030	775	920	460	69	144	192	61	—	—	135	—	34	43	—	—	—	—	—	—	—	—
380	1760	—	—	—	—	—	—	138	192	68	—	—	130	—	36	48	—	—	—	—	—	—	—	—
387	1792	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
393	1730	1385	1052	804	915	480	69	148	202	66	—	—	139	—	40	49	—	—	—	—	—	—	—	—
428	1710	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
439	1747	—	—	—	—	—	—	144	201	68	—	—	136	—	36	46	—	—	—	—	—	—	—	—
446	1700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
452	1673	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
469	1717	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
478	1690	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
479	1750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
481	1719	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
517	—	—	—	—	—	—	—	147	200	68	124	105	137	101	34	49	116	556	148	137	113	112	129	118
519	—	—	—	—	—	—	—	145	199	65	118	106	136	100	33	48	111	558	145	138	107	108	127	132
522	—	—	—	—	—	—	—	143	198	72	118	106	138	102	35	55	120	548	143	132	109	108	124	128

DAḲAHLIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
526	—	—	—	—	—	—	—	147	198	70	119	112	137	—	34	49	—	—	—	—	—	—	—	—
527	—	—	—	—	—	—	—	148	188	68	115	103	146	—	40	52	—	—	—	—	—	—	—	—
528	—	—	—	—	—	—	—	146	193	72	120	113	138	—	36	41	—	—	—	—	—	—	—	—
530	—	—	—	—	—	—	—	144	185	69	112	108	142	—	35	46	—	—	—	—	—	—	—	—
550	—	—	—	—	—	—	—	144	191	70	114	106	137	98	29	50	112	537	—	—	—	—	—	—
571	—	—	—	—	—	—	—	149	189	67	112	107	141	—	47	—	—	—	146	—	—	—	—	—
573	—	—	—	—	—	—	—	144	189	67	111	113	136	—	39	47	—	—	148	—	—	—	—	—
575	—	—	—	—	—	—	—	135	189	64	108	105	135	—	36	45	—	—	138	—	—	—	—	—
583	—	—	—	—	—	—	—	144	195	68	114	106	134	—	35	50	—	—	150	—	—	—	—	—
584	—	—	—	—	—	—	—	140	192	67	116	106	133	—	35	48	—	—	145	—	—	—	—	—
590	—	—	—	—	—	—	—	138	188	63	108	104	135	—	36	46	—	—	141	—	—	—	—	—
595	—	—	—	—	—	—	—	147	199	67	120	105	135	—	32	49	—	—	154	—	—	—	—	—
596	—	—	—	—	—	—	—	—	—	73	120	101	134	—	30	54	—	—	—	—	—	—	—	—
597	—	—	—	—	—	—	—	140	190	66	116	111	143	—	36	46	—	—	150	—	—	—	—	—
598	—	—	—	—	—	—	—	147	188	62	105	97	135	97	30	44	112	537	156	138	109	103	121	118
599	—	—	—	—	—	—	—	143	190	66	116	106	135	105	35	45	119	542	144	133	107	107	124	119
601	—	—	—	—	—	—	—	147	94	70	115	110	133	—	36	49	—	—	143	132	113	121	140	114
608	—	—	—	—	—	—	—	143	193	65	109	106	133	—	38	48	—	—	147	—	—	—	—	—
609	—	—	—	—	—	—	—	144	186	66	110	99	136	—	31	48	—	—	148	—	—	—	—	—
631	—	—	—	—	—	—	—	151	192	64	109	100	143	—	32	49	—	—	148	—	—	—	—	—
645	—	—	—	—	—	—	—	143	186	67	111	103	138	—	33	52	—	—	154	—	—	—	—	—
659	—	—	—	—	—	—	—	141	191	62	109	107	128	—	30	46	—	—	143	131	105	106	124	113
661	—	—	—	—	—	—	—	150	184	60	101	114	141	—	36	46	—	—	143	128	107	103	123	115
662	—	—	—	—	—	—	—	147	203	66	110	113	146	—	40	49	—	—	145	132	111	111	131	110
671	—	—	—	—	—	—	—	142	192	62	112	105	135	—	36	45	—	—	144	—	—	—	—	—

DAḲAHLIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
673	—	—	—	—	—	—	—	140	188	66	112	110	139	—	36	50	—	—	145	—	—	—	—	—
681	—	—	—	—	—	—	—	138	196	67	114	112	140	—	37	45	—	—	147	—	—	—	—	—
730	—	—	—	—	—	—	—	144	188	—	—	—	—	—	—	—	—	—	148	131	111	111	122	113
738	—	—	—	—	—	—	—	145	178	71	114	113	137	—	37	52	—	—	143	129	110	113	125	106
776	—	—	—	—	—	—	—	144	181	—	—	—	135	—	—	—	—	—	142	127	105	108	124	114
795	—	—	—	—	—	—	—	147	187	—	—	—	141	—	—	—	—	—	142	135	113	109	128	119
812	—	—	—	—	—	—	—	141	199	70	114	108	137	—	37	50	—	—	153	133	111	109	127	120
817	—	—	—	—	—	—	—	144	187	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
821	—	—	—	—	—	—	—	144	188	65	116	—	133	—	—	—	—	—	142	130	109	110	128	113
826	—	—	—	—	—	—	—	142	185	72	121	107	133	—	31	53	—	—	147	132	109	116	135	115
828	—	—	—	—	—	—	—	147	194	73	121	108	143	—	37	51	—	—	149	131	109	116	134	118
829	—	—	—	—	—	—	—	148	198	54	98	113	141	—	39	43	—	—	141	—	—	—	—	—
839	—	—	—	—	—	—	—	144	191	75	116	111	141	—	35	54	—	—	142	133	112	121	137	115
840	—	—	—	—	—	—	—	140	202	67	111	107	145	—	43	43	—	—	149	136	115	123	136	121
842	—	—	—	—	—	—	—	142	191	68	113	101	132	93	34	51	112	—	151	131	107	104	123	122
843	—	—	—	—	—	—	—	141	187	67	115	113	131	—	34	49	—	—	142	126	106	110	127	114
849	—	—	—	—	—	—	—	144	186	72	122	105	137	—	34	49	—	—	144	131	107	105	123	116
865	—	—	—	—	—	—	—	145	177	63	108	108	135	—	36	46	—	—	135	—	—	—	—	—
876	—	—	—	—	—	—	—	143	186	65	112	101	136	—	38	49	—	—	141	—	—	—	—	—
881	—	—	—	—	—	—	—	140	185	70	120	109	135	—	37	49	—	—	140	—	—	—	—	—
889	—	—	—	—	—	—	—	148	200	68	112	107	137	—	40	49	—	—	145	—	—	—	—	—
890	—	—	—	—	—	—	—	145	191	68	109	106	133	—	33	50	—	—	137	—	—	—	—	—
901	—	—	—	—	—	—	—	137	200	60	106	112	136	—	38	43	—	—	142	—	—	—	—	—
923	—	—	—	—	—	—	—	146	208	69	120	107	139	—	34	48	—	—	148	—	—	—	—	—
927	—	—	—	—	—	—	—	147	191	66	121	106	146	—	38	48	—	—	143	—	—	—	—	—

DAḲAHLIA (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
930	—	—	—	—	—	—	—	147	202	67	113	107	136	—	41	48	—	—	150	—	—	—	—	—
940	—	—	—	—	—	—	—	147	194	70	113	111	138	—	—	—	—	—	152	—	—	—	—	—
947	—	—	—	—	—	—	—	144	182	63	107	109	136	—	34	46	—	—	139	—	—	—	—	—
948	—	—	—	—	—	—	—	141	185	69	114	105	133	—	36	46	—	—	149	—	—	—	—	—
960	—	—	—	—	—	—	—	141	196	70	120	107	132	—	38	46	—	—	148	—	—	—	—	—
969	—	—	—	—	—	—	—	149	189	70	121	100	130	—	36	44	—	—	154	—	—	—	—	—
978	—	—	—	—	—	—	—	146	193	70	119	109	132	—	33	45	—	—	139	132	108	110	138	117
998	—	—	—	—	—	—	—	145	198	63	109	113	141	105	38	46	120	—	143	129	112	114	136	118
1004	—	—	—	—	—	—	—	141	199	69	118	112	133	—	38	48	—	—	141	—	—	—	—	—

COPTS.

56	1700	—	—	—	—	—	—	138	188	66	114	98	131	104	33	50	116	527	—	—	—	—	—	—
65	1725	—	—	—	—	—	—	133	190	63	115	96	127	98	40	49	116	527	—	—	—	—	—	—
73	1590	—	—	—	—	—	—	147	193	62	118	103	133	98	35	47	108	554	—	—	—	—	—	—
121	1723	—	—	—	—	—	—	156	200	65	122	103	141	103	35	51	116	573	—	—	—	—	—	—
128	1778	—	—	—	—	—	—	142	197	62	109	101	131	99	41	47	117	547	—	—	—	—	—	—
172	1732	—	—	—	—	—	—	141	199	69	128	108	137	105	39	54	120	552	—	—	—	—	—	—
208	1735	—	—	—	—	—	—	142	188	64	109	101	130	100	33	49	110	531	—	—	—	—	—	—
220	1780	—	—	—	—	—	—	139	208	66	120	117	150	104	38	53	120	558	—	—	—	—	—	—
247	1707	—	—	—	—	—	—	141	196	63	110	102	136	98	39	49	113	547	—	—	—	—	—	—
262	1695	—	—	—	—	—	—	135	195	64	—	—	133	—	33	47	—	—	—	—	—	—	—	—
272	1707	1388	1060	800	872	450	70	145	197	60	—	—	139	—	36	47	—	—	—	—	—	—	—	—
295	1708	1378	1048	775	895	465	79	147	198	64	—	—	139	—	37	41	—	—	—	—	—	—	—	—

COPTS (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
321	1735	—	—	—	—	—	—	152	180	64	—	—	134	—	33	49	—	—	—	—	—	—	—	—
322	1687	—	—	—	—	—	—	149	187	62	—	—	132	—	35	44	—	—	—	—	—	—	—	—
324	1718	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
327	1722	—	—	—	—	—	—	136	194	68	—	—	136	—	36	50	—	—	—	—	—	—	—	—
328	1737	—	—	—	—	—	—	147	200	72	—	—	136	—	37	49	—	—	—	—	—	—	—	—
398	1715	1417	1061	798	924	465	58	145	182	64	—	—	135	—	35	50	—	—	—	—	—	—	—	—
400	1708	—	—	—	—	—	—	145	190	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
411	1752	1444	1104	840	925	465	61	142	186	67	—	—	133	—	31	49	—	—	—	—	—	—	—	—
448	1705	—	—	—	—	—	—	149	187	71	—	—	139	—	40	50	—	—	—	—	—	—	—	—
541	—	—	—	—	—	—	—	150	189	60	104	117	141	105	37	40	117	543	145	138	110	110	129	114
542	—	—	—	—	—	—	—	143	196	64	108	108	139	—	34	49	—	—	—	—	—	—	—	—
557	—	—	—	—	—	—	—	139	181	69	112	109	134	—	34	50	—	—	146	—	—	—	—	—
566	—	—	—	—	—	—	—	137	195	73	124	102	131	—	34	51	—	—	143	—	—	—	—	—
585	—	—	—	—	—	—	—	144	191	70	116	102	132	—	34	49	—	—	147	—	—	—	—	—
588	—	—	—	—	—	—	—	140	190	68	120	111	139	107	32	50	124	543	147	138	109	113	125	125
626	—	—	—	—	—	—	—	145	200	—	113	104	143	—	36	47	—	—	137	—	—	—	—	—
639	—	—	—	—	—	—	—	143	199	65	112	111	133	98	40	43	117	552	147	131	109	113	127	119
649	—	—	—	—	—	—	—	137	192	63	111	100	132	—	34	—	—	—	145	—	—	—	—	—
674	—	—	—	—	—	—	—	151	203	70	117	106	144	101	39	47	120	565	146	138	113	118	141	119
682	—	—	—	—	—	—	—	148	191	56	101	109	137	—	36	42	—	—	147	—	—	—	—	—
689	—	—	—	—	—	—	—	137	203	68	117	107	134	—	32	48	—	—	145	—	—	—	—	—
690	—	—	—	—	—	—	—	143	193	68	113	108	140	—	41	47	—	—	152	—	—	—	—	—
694	—	—	—	—	—	—	—	150	199	68	110	113	145	103	36	50	120	550	147	137	112	107	126	113
719	—	—	—	—	—	—	—	136	186	64	111	104	132	—	36	43	—	—	147	138	110	105	124	114
721	—	—	—	—	—	—	—	143	196	71	119	108	134	—	34	48	—	—	155	148	112	109	125	114

COPTS (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
739	—	—	—	—	—	—	—	146	194	72	117	113	141	100	36	52	120	547	146	136	113	110	129	117
778	—	—	—	—	—	—	—	143	204	68	111	105	138	100	34	46	119	560	154	140	115	118	128	124
856	—	—	—	—	—	—	—	144	195	75	128	116	138	—	37	54	—	—	146	136	111	112	141	117
861	—	—	—	—	—	—	—	140	191	63	110	108	138	—	35	41	—	—	150	134	106	110	129	121
873	—	—	—	—	—	—	—	140	198	70	121	110	136	100	35	47	118	547	151	142	112	112	128	116
917	—	—	—	—	—	—	—	148	196	65	111	109	148	104	37	41	118	—	143	129	109	118	137	106
973	—	—	—	—	—	—	—	135	190	66	116	99	126	89	38	48	—	—	143	129	109	107	128	123
996	—	—	—	—	—	—	—	143	189	68	117	118	147	102	38	48	113	—	138	130	113	115	133	109

MIXTURES.

LOWER EGYPT—SUDAN.

21	1803	—	—	—	—	—	—	147	199	67	114	106	138	108	44	49	123	562	—	—	—	—	—	—
229	1685	—	—	—	—	—	—	150	198	69	118	115	146	111	49	38	131	—	—	—	—	—	—	—
392	1678	1379	1045	784	925	453	66	149	188	61	—	—	144	—	38	41	—	—	—	—	—	—	—	—
409	1747	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
536	—	—	—	—	—	—	—	149	201	71	118	111	137	103	36	51	120	557	149	135	110	114	122	124
578	—	—	—	—	—	—	—	135	196	63	107	104	132	—	40	43	—	—	146	—	—	—	—	—
587	—	—	—	—	—	—	—	145	196	68	121	110	142	—	36	45	—	—	149	—	—	—	—	—
591	—	—	—	—	—	—	—	140	192	61	104	107	145	107	37	45	120	528	142	130	112	118	134	111
763	—	—	—	—	—	—	—	140	190	69	114	100	132	—	31	53	—	—	151	130	105	104	124	123
796	—	—	—	—	—	—	—	141	192	65	115	111	133	104	38	41	113	537	147	134	107	110	128	117
824	—	—	—	—	—	—	—	139	194	64	110	114	143	100	42	43	107	—	134	127	103	116	132	118
878	—	—	—	—	—	—	—	154	196	68	112	117	148	—	36	49	—	—	148	135	110	109	127	120

MIXTURES (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
882	—	—	—	—	—	—	—	146	194	65	109	110	140	—	41	46	—	—	147	—	—	—	—	—
909	—	—	—	—	—	—	—	150	197	70	119	105	141	—	37	47	—	—	152	137	107	116	132	118
945	—	—	—	—	—	—	—	143	183	62	103	125	141	104	37	44	116	—	143	124	102	105	120	116
967	—	—	—	—	—	—	—	136	192	63	108	105	127	—	42	—	—	—	145	129	107	117	124	118
LOWER EGYPT—UPPER EGYPT.																								
234	—	—	—	—	—	—	—	146	191	61	112	107	134	104	35	47	116	—	—	—	—	—	—	—
292	1720	1394	1064	775	906	468	78	144	194	64	—	—	137	—	42	50	—	—	—	—	—	—	—	—
628	—	—	—	—	—	—	—	143	199	68	119	107	136	—	39	48	—	—	142	—	—	—	—	—
752	—	—	—	—	—	—	—	150	194	65	113	113	142	—	38	47	—	—	147	130	105	105	126	119
761	—	—	—	—	—	—	—	146	198	65	115	117	138	—	34	48	—	—	154	—	—	—	—	—
885	—	—	—	—	—	—	—	145	206	69	121	114	144	—	40	50	—	—	153	—	—	—	—	—
935	—	—	—	—	—	—	—	145	203	75	125	116	141	—	41	51	—	—	145	—	—	—	—	—
997	—	—	—	—	—	—	—	141	190	65	110	109	135	—	38	49	—	—	144	—	—	—	—	—
LOWER EGYPT—LOWER EGYPT.																								
25	1726	—	—	—	—	—	—	147	209	66	124	108	137	108	38	48	121	572	—	—	—	—	—	—
174	1780	—	—	—	—	—	—	143	207	70	124	114	144	111	35	51	125	570	—	—	—	—	—	—
199	1708	—	—	—	—	—	—	141	196	61	112	113	143	101	38	48	114	546	—	—	—	—	—	—
217	1635	—	—	—	—	—	—	150	189	66	123	112	143	104	35	52	121	—	—	—	—	—	—	—
239	—	—	—	—	—	—	—	148	194	69	114	104	130	96	44	54	115	—	—	—	—	—	—	—
318	1732	—	—	—	—	—	—	140	204	68	—	—	144	—	27	44	—	—	—	—	—	—	—	—

MIXTURES (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
323	1715	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
361	1760	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
570	—	—	—	—	—	—	—	148	199	67	110	110	139	104	39	47	—	—	148	—	—	—	—	—
586	—	—	—	—	—	—	—	143	194	66	108	110	136	—	36	49	—	—	155	—	—	—	—	—
633	—	—	—	—	—	—	—	144	212	73	123	109	138	—	36	53	125	577	151	141	117	119	136	126
684	—	—	—	—	—	—	—	145	195	74	121	107	136	—	33	50	—	—	156	—	—	—	—	—
691	—	—	—	—	—	—	—	144	195	67	114	109	137	—	34	46	—	—	146	—	—	—	—	—
693	—	—	—	—	—	—	—	143	198	66	118	113	143	—	40	48	—	—	142	—	—	—	—	—
740	—	—	—	—	—	—	—	141	190	63	113	104	140	—	—	—	—	—	139	134	110	113	138	113
742	—	—	—	—	—	—	—	138	187	67	119	101	129	—	—	—	—	—	147	133	110	104	122	119
747	—	—	—	—	—	—	—	147	200	67	114	106	141	—	37	47	—	—	147	136	111	110	133	122
793	—	—	—	—	—	—	—	137	190	—	—	—	137	—	—	—	—	—	140	130	108	107	128	117
799	—	—	—	—	—	—	—	147	193	—	—	—	137	—	—	—	—	—	144	130	108	113	130	112
816	—	—	—	—	—	—	—	150	201	63	108	114	143	—	37	46	—	—	150	139	112	113	133	123
851	—	—	—	—	—	—	—	155	198	70	117	112	141	—	37	47	—	—	150	—	—	—	—	—
938	—	—	—	—	—	—	—	140	195	65	111	108	133	—	35	47	—	—	140	—	—	—	—	—
951	—	—	—	—	—	—	—	151	196	68	110	108	142	—	36	48	—	—	146	—	—	—	—	—
986	—	—	—	—	—	—	—	147	188	69	119	108	132	—	37	49	—	—	148	—	—	—	—	—
979	—	—	—	—	—	—	—	148	192	69	119	108	133	101	36	47	121	—	148	134	112	109	130	115
UPPER EGYPT—SUDAN.																								
26	1713	—	—	—	—	—	—	144	192	61	110	105	129	101	38	44	112	542	—	—	—	—	—	—
33	1753	—	—	—	—	—	—	156	206	69	128	112	146	117	39	48	126	489	—	—	—	—	—	—

MIXTURES (*continued*).

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
112	1720	—	—	—	—	—	—	143	194	66	113	113	135	101	38	50	116	543	—	—	—	—	—	—
390	1752	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
443	1730	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
615	—	—	—	—	—	—	—	142	201	63	113	105	134	97	36	52	113	555	143	134	115	118	128	116
653	—	—	—	—	—	—	—	142	192	67	114	111	135	106	45	45	124	537	150	139	115	115	127	111
696	—	—	—	—	—	—	—	154	199	68	113	117	144	106	42	45	128	562	156	129	107	111	127	125
952	—	—	—	—	—	—	—	145	195	72	123	116	137	105	36	50	123	—	139	137	115	120	137	110
UPPER EGYPT—UPPER EGYPT.																								
70	1740	—	—	—	—	—	—	138	188	66	120	110	137	106	43	52	120	535	—	—	—	—	—	—
106	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
274	1717	1390	1050	790	935	480	85	150	192	67	—	—	137	—	49	33	—	—	—	—	—	—	—	—
378	1756	—	—	—	—	—	—	150	190	67	—	—	136	—	37	45	—	—	—	—	—	—	—	—
458	1762	1410	1071	800	926	480	68	143	206	69	—	—	144	—	40	48	—	—	—	—	—	—	—	—
507	—	—	—	—	—	—	—	138	202	65	113	111	136	—	37	45	—	—	—	—	—	—	—	—
541	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
778	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
875	—	—	—	—	—	—	—	148	201	67	117	106	144	—	35	49	—	—	147	136	109	110	129	119
1005	—	—	—	—	—	—	—	144	199	67	116	104	136	—	—	—	—	—	144	—	—	—	—	—
LOWER EGYPT—TURK.																								
5	1774	—	—	—	—	—	—	150	193	73	114	113	146	116	39	46	—	—	—	—	—	—	—	—
251	1816	1470	1133	837	965	1485	—	150	194	64	—	—	144	—	38	58	—	—	—	—	—	—	—	—

MIXTURES (*continued*).

UPPER EGYPT—MAGHRABI.

Subject Number.	3	6	7	8	9	10	11	12	13	14	15	16	17	22	25	26	27	28	30	31	32	33	34	35
64	1750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
64	1750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
985	—	—	—	—	—	—	—	145	199	65	112	108	143	—	37	44	—	—	142	134	111	113	136	118

UPPER EGYPT—BEDAWI.

831	—	—	—	—	—	—	—	146	195	66	115	106	137	100	36	49	116	544	155	135	106	107	128	124

NOTES ON SINHALESE MAGIC.

By W. L. Hildburgh, M.A., Ph.D.

[With Plates XI–XVI.]

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Introductory.

In the following notes the parts relating to charming, to devil-dancing, and to astrology in Ceylon should be regarded as supplementary to information which has been published previously, notably in *On Demonology and Witchcraft in Ceylon*,[1] *Yakkun Nattannawā and Kōlan Nattannawā*,[2] *The History and Doctrine of Budhism*,[3] and *Sinhalesische Masken*.[4] Repetition of what is to be found in those works has been avoided as much as possible in an attempt to give such details of ceremonies as might be of interest to the ethnologist and the folk-lorist. The parts relating to the minor magical practices (as distinguished from those particularized above), including amulets, enter, I believe, upon a field which has been but little worked.[5]

All my information (unless otherwise noted) has been taken direct from believers in, or practitioners of, the matters discussed; principally from Sinhalese, but partly from Tamils and, in a very small measure, from Indian Mohammedans. As many of the Sinhalese, especially at Colombo, are acquainted with English, frequently no interpreter was required in making enquiries as to matters known to the ordinary people. On several occasions my interpreters were Sinhalese of fair position, who had known me to have, since some years, an interest in matters magical, and who had furthered it in various ways; but in most cases I employed a charmer who spoke English, whom I found to be reliable (except as to minor details in matters of memory, where he sometimes became confused) on the various occasions when, without his knowledge, I tested him by means of information derived from independent sources. I was able, through this charmer, to obtain much information from other charmers, to whom he vouched for my interest in and knowledge of the subject, and against whose impositions, on the few occasions when such were attempted, he warned me. Freedom of speech on the part of these people was promoted, I think, by my known possession of many magical books (some of them

[1] D. De Silva Gooneratne, in *Jour. Cey. Branch R. As. Soc.*, 1865–6.

[2] J. Callaway; London, 1829.

[3] E. Upham, *The History and Doctrine of Budhism, with notices of the Kappooism, or Demon Worship, and of the Bali, or Planetary Incantations, of Ceylon;* London, 1829.

[4] A. Grünewedel, in *Internat. Archiv. f. Ethnog.*, Band VI, p. 71.

[5] In Clough's *Sinhalese-English Dict.*, 1892 ed., there are many references given, amongst the definitions, to both professional magical practices and those of the folk.

containing rare or particularly powerful mantras), and also, I believe, because in some cases I was regarded as having a knowledge of foreign magic as well as of Sinhalese.

The ordinary Sinhalese, with whom the European usually comes in contact, seems to know comparatively little about magical matters, although they have often no small part in the conduct of his life. While in many cases his ignorance is of the same nature as that of Europeans where the practices of their own physicians are concerned, it is, doubtless, in others more or less feigned, prompted by the common disinclination to speak of magical matters to strangers of superior standing, and with different beliefs. It is due to this that, while many of the notes relating to general customs and to amulets have been taken from servants, shop-keepers, and others ordinarily engaged, almost all those relating to charming and to devil-dancing have been obtained from persons engaged, to some extent at least, in the professional practice of magic.

Although a very large proportion of the Sinhalese charms are recorded (in some form) in books, I have used such books to a very limited extent in obtaining my material, and have drawn it, verbally, direct from professional operators. Owing to this (although matter concerning a ceremony as performed, and the accompanying beliefs, as related to me, are assumed to be correct), there are, in many cases, I believe, mistakes due to the reciter's faulty memory, such mistakes consisting principally of omissions or, sometimes, of confusion in the number of objects to be used in a ceremony. These mistakes are, however, I think, generally of but little consequence, and are due, where confusion occurs, to the mixing of some of the least important details of one elaborate ceremony with those of another perhaps equally elaborate. Unless otherwise stated all customs noted are those of the Sinhalese.

As an aid to the comprehension of the matters to be described, the following brief notes, taken from *On Demonology and Witchcraft in Ceylon*, on some of the essential features of Sinhalese magic concerned with devils, are appended:—The demons are of two kinds: evil spirits known as *Yaka*, who form a large community governed by a king and by a series of officers of various grades below him; and a species of inferior gods (whom I call "Benevolent Devils"), known as *Dewatawa*. It is believed that there are enormous numbers of demons in existence, although only about 50 or 60 of these enter into the demon worship. The *Yaka* do not come in person to afflict people, but act by (literally) "keeping sight" upon them, with results the same as if the devils were actually present. Sometimes, in conjunction with their other operations, the devils may, while remaining far distant, send apparitions representing themselves. The charms (mantras) are generally in Sanskrit, Tamil, or Sinhalese, although there are a few in other languages, such as Arabic, Persian, Telugu, Malaiãlim, and Bengali. In some mantras a mixture of several languages is used; in others an unintelligible collection of meaningless sounds. It is said that much of the virtue of a mantra resides in the peculiar arrangements and combinations of certain letters. The science of charming is

divided into eight parts: the power of inducing swoons, illicit sexual intercourse, the expulsion of demons, compelling the attendance of demons, destruction by discord, causing death, the power of imprisoning, and the power of curing diseases, to each of which are assigned certain seasons, days, and hours for their successful performance. There is a ceremony, called *jîwama* (literally "the endowing with life"), which must be performed, in addition to the recitation of the words of the charm, the difficulty and danger attending which vary according to the result which the operator wishes to obtain.

The spelling of the Sinhalese words in the text is that, in the main, of Clough's *Sinhalese-English Dictionary*, but as, owing to the class of most of my informants, many of the words were received in a corrupt form, all have not been identified; words whose identities were not established are marked (?). The spelling of the names of the devils is that of Grünwedel, in the case of most of those referred to by him.

General Notes.

Impurity (*ceremonial uncleanness*)[1].—When in an unclean state a person ought not to wear anything good or valuable, for such things are liked by the gods, and they dislike them to be polluted. (Compare "Use of gold in magic.")

Evil devils are fond of the smell of the menstrual blood; benevolent devils hate it.

During her menses and for seven days thereafter a woman is unclean. Should yantras be placed upon her before the seven days are past, they will not be effective.

A person who has been charmed, for the cure of disease, the removal of evil influences, or his general benefit, should for a certain period remain pure and out of reach of contamination by persons in an impure state. As a warning to such people to keep away from the patient a few bunches of mango leaves are hung up in the outer doorway of his house.

Coconut fibre is an unclean substance, because during its manufacture it is put into dirty water or unclean places. The leaves upon which magical writings are inscribed are, consequently, never tied together by charmers with cord made of that substance. When leaves are found so fastened it is an indication that they have been tied together by some ignorant person.

See "Protection of infants" for infants' impurity; "Use of gold in magic" for sacrilegious use of gold; and "Amulets (Charmed Objects)" for loss of efficacy caused by impurity.

Use of iron in magic[2].—Iron is abhorred by devils. A reason (which is probably really the result of the belief) given for this is that the devils' king, Wesamuṇu, uses an iron rod to punish his disobedient subjects.

In certain ceremonies in which the "sight" of devils is required, the

[1] In *Dem. Cey.*, p. 88, are some notes on impurity, especially that due to a dead body.

[2] Compare notes in Thurston's *Ethnographic Notes in Southern India*, p. 341.

"decorated chair" (altar of offerings) and the stool which the operator may sometimes rest upon, must be made without iron (wooden pegs are used instead of nails), or the "sight" cannot be obtained.

During thunderstorms iron objects are put outside the house and exposed to the sky. This observance was explained as due to a belief that iron is disliked by lightning, which will not come near places where iron is exposed.

Miniature swords made of iron, with scabbards of silver or gold, are sometimes worn by people as protections.

For about three weeks after (before ?) the birth of a child, a woman wears an areca-nut cutter or a grass cutter at her waist, with the blade hidden by her clothing. Should she be ill, or become ill, during that period the instrument is carried until health is regained.

A protection to keep evil spirits, the effect of the evil eye, and the like, away from a house, consists of a pair of iron ornaments, each in the form of a lion holding out a *Para-walalla* (see "Amulets," *Pañcháyuda*) painted yellow, and mounted each upon a block of wood. They are to be fastened up, one upon either post of the inner side of the entrance to the house. The iron and the *Para-walalla* are the protective parts of the device; the figure of the lion is used because that animal is beloved by gods and benevolent devils. The yellow colour has no significance. In order to increase their effect the ornaments are charmed.

See "Amulets (Misc. notes) (*Pañcháyuda*) (Children's amulets)," and "Protection of cattle," for other amuletic uses of iron; "Curative Practices (Effect of Evil Eye), (Cramp), (Head-ache)" and "Punishing devils" for uses of iron in curing; and "Astrology" for an obstructing effect of iron.

Use of gold in magic.—Gold is a substance liked by the gods, who are themselves radiant with it. It is, consequently, a kind of sacrilege for a person in an impure state to wear gold.

See "Amulets" for inserted pellet of gold; "Protection of infants" for amuletic pellets containing gold; and "Curative practices (Rat bite)."

Use of stones in magic.—See "Protection of houses," "Astrology," and "Amulets (Animal products)," for use of stones as amulets; "Votive offerings" for use of stones as *Ex-votos;* and "Love-Charms" for use of stones as counters.

Use of garlic in magic.—Authorities on magic state that the evil devils hate garlic, whereas the gods and benevolent devils are pleased by it.

Garlic, either simple or charmed, is eaten by women who have brought forth children, for the purpose of keeping off evil spirits and evils of every kind, and to promote the flow of milk.

As a cure for the diseases caused by worms (including amongst such, apparently, infantile convulsions) a child should drink woman's milk into which the juice of baked garlic has been squeezed. If drunk by the mother, this same liquid serves to protect her from various sicknesses.

Garlic is hung at the wrists of infants for three to seven days after birth, in order to protect them from worm diseases and from devils.

As a cure for head-ache, water into which some charmed garlic has been rubbed is put upon the forehead.

As a cure for ear-ache, some charmed garlic is put into the ear.

Animals in connection with magic.—In some forms of charming the devils summoned send their apparitions in the forms of various animals (see *Dem. Cey.*, p. 60; also "Killing of enemies").

The animals used in connection with magical ceremonies should always be black. The fowls, unless their colour be specified, may usually be of any colour.

There are four "clean" (pure) animals which are especially liked by the gods and the benevolent devils—the lion, the tiger, the unicorn, and the elephant. (On the "moonstones" at Anuradhapura one of the concentric semicircles is very frequently made up of a series of sets of four animals—a lion, an elephant, a horse, and a bull.)

See "Amulets (Animal Products)" and various headings under "Curative practices" for uses of animal products; "Killing of enemies" for uses of cocks employed in charming; "Protection (Perils), (Houses), (Crops)," for protections against animals; and "Change of appearance" for assumption of animal's form.

Colours in connection with magic.—Many black objects, such as black glass rings and bangles and black hair ropes, are considered to be protective. The frames of the painted or printed pictures used as charms in houses are usually black, in order to increase the protective action, or to make the picture itself safer from attacks.

Black dresses or red dresses should not be worn by children, because certain evil devils like these colours, and are attracted by them. Dark blue, because of its resemblance to black, is rather bad for children's wear. White, which is disliked by evil devils, is the best colour for children's dresses. Yellow is very good. Other colours may be used without affecting the child.

The five Buddhist colours worn together are protective.

Certain colours are beneficial to their wearers, according to the planets under which those persons were born.

See, for various notes, "Animals in connection with magic," "Love-Charms," "Curative practices (Bleeding), (Children's sicknesses)," and "Devil-dancing."

"5" *in connection with magic*[1].—The pentacle () is used as a design in the construction of yantras, and is tatued upon the body as a protection. Its five points guard the "five gates" (these are figurative or psychical entrances, not physical openings) of the body, whereat unseen enemies are constantly watching for chances to cause harm. It is sometimes branded upon cattle in four places, as a cure for lameness.

See "Love-charms," "Injury of enemies," "Killing of enemies," and "Amulets (Medicinal Substances)," for various applications of "5"; "Colours in...magic" for

[1] In Clough's *Sinhalese-English Dictionary*, under various compound words commencing with *pas* or *pañchá*, is given much folk-lore connected with "5."

use of five colours; "Amulets (*Pañcháyuda*)" for use of five symbols; and "Amulets (Metallic Amulets)" for use of five metals.

Transmutation of copper to silver.—The following recipe for changing copper to silver is evidently merely one for making a white alloy, or a tough amalgam, of silver. It was given from memory.

The liquids used are:—

(*a*) A decoction of about twenty sliced lemons boiled with a handful of salt.

(*b*) One measure of juice extracted from the bark of an old mango-tree.

(*c*) Three measures of lemon juice.

(*d*) Three measures of the juice of the *kámurangá* (a kind of bilimbi, *Averrhoa carambola*) fruit.

(*e*) Three measures of the juice of the *bilin* (*Averrhoa bilimbi*, country gooseberry) fruit.

(*f*) One measure of the milk (juice) of the *elawará* (*?*) [*hela-warά* (*?*)], a kind of milkweed plant.

The copper is first buried in the earth for three days. After exhumation it is heated and plunged into (*a*). It is next cleaned with a kind of fine sand, and is then plunged into the liquids (*b*), (*c*), (*d*), and (*e*) in turn, being heated before, and cleaned after, each plunging. After these operations the copper is melted in a crucible with two cents in weight of mercury. To this amalgam are added one cent in weight of silver, one cent in weight of old coin silver, and one cent in weight of iron sulphate (apparently, but, although said to be green, possibly alum), and all are melted together. The melted mixture is poured into the milkweed juice (*f*), and the product is then re-melted and poured into (*f*) again, the operation being repeated until (usually after from five to seven pourings) the metal loses its brittleness (as tested by hammering), when the operation is finished.

Miscellaneous notes.—A person who is lying down should not be stepped over, for the watching of the benevolent devils would thus be turned from him. A person should, for the same reason, not place his hand upon another person's head, nor take anything from another person's head. Compare "Divination (By an ordeal)."

The leg is the least honourable part of the body, wherefore being kicked is much more offensive to a person than being struck with the hand.

In many charming ceremonies water from a "new well" is required. Such a well may be made by scooping out or digging a small hole in the soil near the edge of a stream or a body of water, and allowing it to fill by drainage.

ASTROLOGY.

Horoscopes.—A *welá-pat-kaḍa* ("time-leaf-piece") is a sheet whereon are given the data relating to the birth of an applicant for a horoscope. Ola-leaves are generally used, but paper is often employed as the base. A *welá-pat-kaḍa* is

prepared by the astrologer when the applicant's first horoscope is constructed, and serves, since other copies are not required, as a basis for any horoscope the applicant may order later.

Horoscopes have, almost invariably, the form of a roll, for the reason that it is considered necessary to write each horoscope upon a single ola-leaf, which is best preserved in rolled form. Horoscopes, in the language in which they are prepared, can be read only by the initiated, for which reason people sometimes have their horoscopes translated into ordinary language; the translations may, unlike the actual horoscope, be written in ordinary books without prejudicial effects.

Amulets.—The favour of the planets may be secured, or unfavourable influences due to them neutralised, by means of written amulets (see "Yantras"). The favour of a planet may be secured, or evils due to it averted, by wearing the stone which represents it, or by wearing a certain colour. A planetary stone ought not to be set with iron, nor ought brass, which is a base metal, be used with it; it should be set in gold, silver or copper.

The *Nawaratna*-ring, a favourite amulet among the better classes of Sinhalese, is a finger-ring, almost always of gold, set with nine gems (*Nawaratna* = nine precious-stones) and suitably charmed. The nine gems used are representative of the nine planets (sometimes each is thought to have the colour of the planet to which it corresponds), and ought to be perfect stones. *Narwaratna*-rings are worn as correctives of malign planetary influences, to bring good fortune, against the effect of the evil eye, etc. Rings and other ornaments set with the nine gems are commonly sold by the Sinhalese jewellers, but no amuletic virtues are ascribed to these, which are worn as ordinary personal jewellery. *Nawaratna*-rings, which have been properly charmed, are hard to get, and very expensive. There appear to be three quite distinct methods of imparting magical virtues to a *Nawaratna*-ring:—(*a*) (communicated by a wearer of such a ring) By setting each stone, one at a time, under the influence of the planet to which it corresponds; thus years sometimes are required for the completion of the ring; (*b*) (communicated by a vendor of uncharmed rings) By placing the completed ring, with other objects to which magical properties are to be given, in the preaching-shed during the ceremonies to clear a village of disease, and afterward subjecting it to some special blessings by the priests; and (*c*) (communicated by a charmer) By charming the mechanically completed ring by regular charming ceremonies. The charming ceremonies should extend over a considerable period, the longer the better. Some rings are endowed with their virtues by nine charmings in one day, some by nine charmings in four and a-half days (= nine half-days), some by a charming each morning and evening during nine weeks, and others, the best that are made, by a charming each morning and evening during nine months. For the charming a considerable number of things are used, including nine kinds of flowers, nine kinds of buds, nine kinds of water, etc. The nine kinds of water are as follows: river-water, lake-water (from a body of water with an outlet), pond-water (from a body of water without an outlet), well-water, rain-water; water on leaves after

rain, water in the cavities of trees, water in the fields after rain, and water in the hollows of rocks on mountains after rain.[1]

See also "Amulets (*Pañcháyuda*)."

MISCELLANEOUS MAGIC.

CHARMERS.

Miscellaneous notes.—Should a charmer make even a slight mistake during the performance of a "serious" charming ceremony (*i.e.*, a ceremony for which he has summoned the "sight" of powerful and malignant devils), he renders himself liable to an immediate attack by the devils he has called upon, resulting in serious injury and perhaps in death. It is for this reason that the mantras for such ceremonies must be learned by heart, and not read from a book during the performance, since in reading a mistake may easily be made. A charmer prefers to learn from an old book rather than from a new one, because there is a smaller chance of errors, due to copying, in the former.[2] The verses of other kinds which are recited during various curative and protective ceremonies must also be learned by heart, because, although no danger due to slight mistakes in their recital need be apprehended, the charmer cannot hold a book (his hands being otherwise occupied), nor read while dancing.

A peril to which a charmer is exposed while engaged in "serious" charming is that some rival charmer, jealous of him, or angry at not having been himself chosen, may render the summoning of the devils' "sight" not merely difficult, but even dangerous.

A charmer always, if possible, allows his hair to grow long. Should he, as often happens during the performance of "serious" charming, be overcome by the devils he has summoned, he is revived by his assistant, who pours charmed water upon him and ties knots, accompanying the process by the recital of certain mantras, in his hair. Such knots are tied only for the purpose of reviving the operator; were they to be made before the ceremony, in order to protect him, he would find it difficult, or impossible, to get the devils' "sight," since the charmed knots are distasteful to them.

A less important reason for the hair being kept long is that in some ceremonies it is required that the charmer dress as a woman (compare "Curative Practices, Barrenness"). In certain of the ceremonies in which he plays a woman's part three strands of his hair are plaited together, and the braid thus formed is stretched from one side of the head upward, toward the middle of the top of the forehead.

Sons are born to charmers as frequently as to other men, but the proportion

[1] In *Yakkun Nattannawa*, "Practices of a Capua," p. 20, five kinds of water are mentioned for a charming ceremony: water from cavities of an iron-tree, from a brick-kiln, a place where clothes are washed, a place haunted by devils, and a blacksmith's trough. These seem to me to represent the Buddhist five elements—wood, earth, water, fire (?), and iron.

[2] One form of the danger is treated of at length in *Dem. Cey.*, pp. 60, 61.

of such children who die is, it is said, much greater than the normal. This circumstance is attributed to the action of the devils, who fear lest the sons may, when grown, follow their fathers' profession, and command the devils as their fathers did before them. Should a charmer find that his sons always die during their childhood, he may (as did some of the charmers with whom I was acquainted) give up "serious" charming for a number of years, until his boys have passed through the dangerous period.

Should a charmer be unclean (as from eating forbidden food, such as pork, for example), he will have difficulty in obtaining the "sight" of the devils he wishes to summon. For this reason charmers are more careful than other men with regard to impurity in general.

When he wishes to summon the "sight" of one or more devils, before the main part of a charming ceremony, the charmer, taking some prepared *dummala* powder in his right hand, and holding it near to his mouth, pronounces over it a kind of mantra called *dummala-warama*. Then he casts the powder upon burning coals, allowing the smoke to come upon him, thus drawing to himself the "sight" of the devils he requires, which causes him to shake and to shiver. Some of the *dummala-warama* are so terrible and so powerful that they are seldom set down in writing, but are transmitted verbally, generally by a father to one only of his sons; should the charmer write them out, as an aid to his memory, he usually buries secretly the leaves bearing them, before he dies. Should strangers wish to learn such mantras as these, the charmer who teaches them exacts a high fee for his services.

When the prepared *dummala* powder (resin with a small amount of nitre) is thrown upon a burning torch, as is done in some ceremonies, it burns with almost explosive rapidity, giving a sudden flash; it is probable that the introduction, as a factor in so many charming ceremonies, of the powder, the smell of whose smoke is believed to be liked by the evil devils, has been aided by this action.

Love-Charms.

With waxen images.—The following method may be applied at the instance of either a man or a woman; naturally, it is generally done for the former. Two images, a male and a female (the difference in sex being indicated principally by the breasts of the female, which are absent in the male) are formed of a mixture of five kinds of wax, such as the wax of the humble bee, of the large black bee, of the kaneyiya fly, etc. As the relative proportions of these ingredients are immaterial, comparatively small quantities of those which are expensive are generally used in the mixture. To each image there may be attached a paper bearing the name of the person represented; or the personality of the image may be indicated in some other way. For the charming a "decorated chair" (altar of offerings, a chair is generally used for convenience) is prepared as follows:—The seat of the chair is covered with plantain leaves, and a handkerchief (or some similar cloth) of five colours is hung over the back. Upon the plantain leaves there are laid

some areca flowers, arranged to form nine compartments, in each of which there is a betel leaf upon which lies a small copper coin (a ½-cent piece), the middle compartment containing, in addition, a small silver coin, all the coins being covered with flowers. Upon the plantain leaves there are laid a number of other objects—a leaf of the jak-fruit tree rolled as a cone and smeared with wet sandal-wood powder, one or two bits of camphor, three or four sticks of sandal-incense, a piece of fresh tamarind, a small bottle of scent (such as cologne-water), a hen's egg, a woman's hair-combing comb, and, finally, the two images upon a layer of flowers of five kinds (preferably sweet-scented flowers, though any kind except *kaduru* (dog-bane) flowers may be used). The images are laid with the breasts alone in contact, the male above and across the female so that his head is beyond her left side, and the lower part of his body beyond the right (position as used by my informant, who had performed the charm on several occasions). The charming is done in an empty house (where no contaminating influences are likely to interfere), or in a cemetery, a partially opened grave, or some similarly suitable place, at evening, midnight, and morning, and until it is completed the operator must be careful not to become in any way impure (it is, indeed, preferable for him to keep away from all women during the whole of the day of the ceremony). Before commencing the ceremony the charmer cleanses himself thoroughly with limes and water, and puts on clean clothing. During the performance all the objects employed, from the "decorated chair" to the stool (should he use one) upon which the operator sits, are thoroughly fumigated with charmed *dummala* powder thrown upon hot coals. The ceremony begins, on each occasion, with the recital, seven times, of a charm to attract Vishnu's attention, and to ask his permission to proceed. This is followed by the recital, 108 times (the counting being marked by the use of stones held in the hand), of a mantra wherein the operator bids certain five devils, whom he names, to hearken unto him exclusively, and whom he tells (where a woman is the victim) "the woman that I mention make to tremble, her blood, her flesh, her chest, the hair of her body; and cause her to come to the place I indicate, to obey me." During the recital of the mantras the operator kneels before the "decorated chair." When the charming has been completed, early in the morning, the images are separated and (in this case) the female image is carried in the hand, behind the back (in order that it may not be injured by the breath of the person carrying it), without a single word being spoken, to the woman's house, and is there buried secretly in a spot where she will be sure to step over it. The male image, meanwhile, is carried by the lover. When the female image has been stepped over by the woman it is exhumed and, placed against the male image, is carried by the lover. The effect of the charming is to cause the woman to look after her lover when he passes, and to think of him to the exclusion of all else. Should marriage take place, in order that the affection of the couple may continue, the images ought to be buried in a deep hole and covered with a large stone. Should it be desired at any time to break the spell the male image (in the above case) is buried where the woman will step over it, whereby her love is caused to

turn to hatred. When the spell has been broken the image may be left where it lies, or it may be exhumed (as is more often the case) for use in similar ceremonies.

After the victim has stepped over her (or his) image, that image, when being carried by the operator (or lover), should, preferably, never be allowed to get lower than his own waist. Should the image be dropped accidentally, it should be picked up by the person who has dropped it, *without his moving a step* from the spot at which he let it fall.

The prominence of the number *five* in this charming was explained as due to the necessity of turning the beloved one's "five passions" toward the lover.

With a flower.—The following method is applicable only to a *virgin*; it is applicable neither to other women nor to men. A flower having been charmed in a certain manner, the victim develops an irresistible craving for it the moment she sees it, and will do anything to obtain it. The lover carries the flower in his right hand while passing the girl, and she is thus impelled to come to speak to him, and, because of her desire for the flower, to do whatsoever he may ask, in the hope that she may obtain it. The flower may be promised to the victim, but must not be given her, since the moment it enters her possession the spell is broken.

See also "Charms to Secure Favour."

Charms to Secure Favour.

With waxen images.—Two *male* images are formed of the mixture of five waxes described under "Love-Charms," into one of which the name of the applicant for favour is placed, the other receiving the name of the judge, governor, or other man whose favour is desired. The images are then charmed in the same manner as those of the love charm, the victim's image is placed where he will step over it, and the other operations are conducted in similar form.

With medicines.—A certain kind of charmed oil, called *Waisia-taila* (?) ("Liking-oil (?)"), requiring an elaborate process of preparation, is rubbed upon the person or dress of him whose favour or friendship is sought. When it is impossible to apply the oil to the victim its possessor may, to secure the result desired, rub a little upon his own forehead. An oil of the same kind may be used as a love charm.

A certain kind of charmed paste, called *Waisia-andun* ("Liking-ointment (?)") which requires an elaborate process of preparation, and which should be preserved in a box made of bell-metal (a choice metal), is rubbed beneath his eyes by its possessor before he enters the presence of the person whose favour is sought. In order that the charm should succeed it is necessary that the applicant be clean and in clean clothing, and that it be noted, by the victim, that the applicant's skin beneath the eyes is blackened. A paste, presumably of similar nature, is used as a love-charm.

By amulets.—An amulet which will cause all persons, and even animals, to like the wearer of it, and which will protect him from the fury of the elements, may be made from the shells of the eggs of the birds which build their nests upon

the walls of houses. Some of these shells having been enclosed in an amulet-case, the whole is charmed, at evening, midnight, and morning, in a cemetery, and, when the charming is finished, is tied, by means of a string with seven charmed knots, upon the wrist or arm, where it will be exposed to the view of those whose favour is desired.

The "jackal's horn," described under "Amulets (Animal products)," is used as a means of securing favour. See also "Amulets (Yantras)."

INJURY TO ENEMIES.

By giving griping pains.—The victim's name is scratched upon a copper coin, which is then charmed upon a "decorated chair." Whenever the victim is to suffer, the charmed piece of copper is placed amongst the embers of a fire made of five kinds of wood of *pas-pẹngiri* trees (trees bearing citrus fruits, such as orange, mandarin orange, lemon, lime, etc.); so long as the metal remains hot the victim will have griping pains.

By paralyzing the mouth.—The operator, hearing his victim speaking or singing, charms the palms of his hands, and then, having separated them, claps them together suddenly. The victim's mouth is thus caused to remain fixed in whatever position, open or shut, it was at the instant the operator clapped his hands, the victim having lost control over it. As a cure, one of the victim's friends charms the palm of his own hand and slaps the victim's face with it.

By paralyzing the throat.—The operater, seeing his victim eating, recites a certain mantra seven times, and then, at a moment when he sees that his victim is swallowing, clicks his tongue in his mouth. The victim's throat is thus caused to become instantly paralyzed, so that his food will go neither up nor down. As a cure, one of the victim's friends recites a certain curative mantra seven times, while holding his thumb and index finger, spread apart, round the front of the victim's throat.

By causing sudden illness.—Some dust is taken from a print of the victim's right foot, and is dropped into a small king-coconut bearing a picture representing the victim, and having its top cut off, after which the whole is charmed. If at any time thereafter a little of the charmed liquid be dropped into one of his footprints, the victim will at once fall down ill, although not very seriously so. When some of the liquid has been used the efficacy of the remainder is gone. As a cure, the victim drinks the milk of a coconut over which a curative mantra has been recited.

By causing sickening.—An image representing the victim is carved from a certain kind of wild yam (not the cultivated, edible variety), which, to render its identity more certain, may be labelled. (In an image of this kind, made for me, the hair is represented as hanging down, because, the charmer said, a person's hair falls down when he is beaten.) Three thorns of one of the varieties of *pas-pẹngiri* trees, having been charmed, are driven, with the recitation of mantras, into the head, the breast, and the navel of the image. The image is then buried in some

spot where the victim will be sure to step over it, and is left there until he has done so, when it is removed from the ground and kept. The victim will become very ill, and, possibly, may die. The operator may, at any time, cause the sickness to stop, by withdrawing the thorns, reciting a mantra for each, and finally putting them into water. As a cure, one of the methods of removing the effects of sorcery (see "Curative Practices") is applied.

By causing incontinence of urine.—This spell is applied to women. Some dust is taken from a urinal which the victim is accustomed to use, and, having been charmed, is worn in a packet upon the arm for about a month. The packet is then buried where the victim will be sure to step over it, and, when she has done so, is removed from the ground and kept. The victim will pass urine unceasingly until the spell is broken, which result may be accomplished at any time by throwing the dust into water.

By causing a flow of blood.—The following method, which is applied to women, causes the victim to flow blood (as during her menses) unceasingly, until she becomes very ill, and, if not cured, dies; it is called *Kilimálé* ("Bloody-issue"). A bunch of twigs and buds of the creeper *niviti-wel* (Malabar nightshade [*Basella alba*]; I was told, although possibly mistakenly, that a non-poisonous variety is used), having been charmed upon a "decorated chair," is tied to a saffron-dyed thread, the other end of which is attached to an object upon the bank of a stream, on whose surface the bunch is allowed to float. As long as the bunch floats upon the stream the victim will flow blood, just as the water flows. Should, as sometimes happens, the bunch become detached, so that it floats away, the victim inevitably dies.

In another method (not limited to women) for causing continuous bleeding, the operator, seeing the blood of his victim coming forth, in however small a quantity, causes the bleeding to continue until the spell is broken.

By causing discord.—A picture resembling a person, with the name of either the husband or the wife of the couple between whom discord is to be produced written upon it, is drawn upon paper or upon a plantain leaf, with powder made from the root of a certain creeper. The picture, having been charmed, is torn into halves, one of which is presented to a certain devil, while the other is retained by the operator. The discord thus produced may, if prolonged, end in separation. In order to break the spell, both husband and wife should step over the half of the picture retained by the operator.

Killing of Enemies.

By means of a corpse.—The corpse of a boy less than seven years old, the first-born of a couple each of whom was a first-born child, is exhumed and is charmed in the cemetery. During the charming ceremony various apparitions of devils appear, in the forms of tigers, foxes, bears, elephants, wild bulls, pigs, etc., which must instantly be supplied with their proper foods, lest they injure the operator. An assistant should be at hand, with charmed water from a "new well"

(see "General Notes (Misc. notes)") in a new pot in readiness, with which to revive the operator whenever he becomes insensible through being overcome by the devils. When the corpse has been charmed three times (at evening, midnight, and morning) it is taken to a house (preferably unoccupied), and is laid upon a clean white cloth upon a chair, with a few (about ten) small jingle-bells on each wrist, and a rattan cane in its right hand. Then, a small opening to the outer air having been made in the roof above, the corpse is charmed. Of a sudden the bells upon the wrists are heard to jingle, and the corpse disappears, leaving its place empty, but only for a moment, for it reappears almost instantly. During its absence the corpse visits the victim, and kills, or at least severely injures him (unless turned back by counter-magic) by striking him with the rattan. When the ceremony has been completed the corpse is cleansed with limes and water, and is put away and kept by the charmer. (This charm, the name of which was given me as "*Tun-kulundul Pilli*" ["Three-first-born killing-spell"], is similar to that described in *Dem. Cey.*, pp. 88, 89, under the name of "*Cumara Pilli*," though differing in a number of details.)

By means of a pair of hands.—(The following information was brought to me, together with the two ivory hands, from a charmer in a jungle village, and passed, partly verbally, partly in writing, through two persons before it reached me. Both these persons were charmers whom I knew, but neither of them had ever heard of the method as given. The hands brought appear at one time to have formed the principal parts of a pair of back-scratchers, and to have been adapted later, by the engraving of magical words, such as *Óm*, *Hum*, "be victorious," etc., and of magical signs, to some magical purpose. Although my information was not obtained at first-hand, I have reasons for assuming that no attempt was made to impose upon me in the matter. I give the information as I received it, believing that, even if it be not true, it is worth preserving as folk-lore.)—The hands, which are made of the bone of a man's forehead, are charmed, and each laid upon its own "decorated chair." The devil Mahâsohon having been summoned, the charming is proceeded with until the proper mantra has been recited 108 times, at which moment one hand, jumping up from its chair, joins the other hand. One of the hands is then buried in some place where the victim will be sure to pass over it, while the other is retained by the operator. At the moment the victim passes over the buried hand he is struck by the devil Mahâsohon so severely that, unless a charmer be called in to cure him, he dies within a day or two. The mark of the devil's fingers appears where the victim has been struck.

By means of a cock.—The operator, having partially dug out a new grave, lies down in it, upon a new mat, with a "decorated chair" over his breast, and a white cock (from whose comb seven drops of blood have been taken and placed amongst the objects on the chair) tied to the great toe of his right foot. Various foods are at hand, to be given to the apparitions as they come, and an assistant stands by ready with charmed water to revive the operator whenever he becomes insensible,

or grinds his teeth in his ecstatic agitation. Amongst the objects upon the "decorated chair" are five thorns, taken from five different kinds of *pas-pevgiri* trees. When the charming has been gone through three times, the chair and the cock are taken to a house (preferably unoccupied) where there are neither unclean things nor women about. The operator lifts one of the cock's wings, and places one of the thorns against a tender spot beneath it; then, having recited a certain mantra and mentioned the victim's name, he pushes the thorn in just far enough to draw blood. At the instant the cock cries out in agony the victim dies, bleeding. The thorn is not withdrawn, but is allowed to fall out of itself, a result which soon occurs. The thorns remaining may be used, without further charming, to kill other persons, being, in each case, used with a white cock, never before used in charming, which has been charmed by exposure to the smoke of *dummala* powder over which a mantra has been recited; the only variation in each case consists in the name of the victim who is mentioned.

A cock which has been used in this ceremony is regarded as having been given to a devil, and is never afterwards used in charming ceremonies. It is taken away by the charmer and, after having been kept awhile by him, is sold. A cock which has been charmed is thought to be particularly suited for cock-fighting, since it is, more or less, under the protection of a devil, and it is usually bought for that purpose. No one cares to eat the flesh of a charmed fowl, which causes many people to have a prejudice against buying white cocks for food. It is, however, generally possible to recognize fowls which have been used for charming, since the wound whence the charmer draws the blood leaves a light-coloured scar upon the red comb. (It seems probable that the use of the blood, in this and in other injury charms, is a softened form of the actual sacrifice of the bird, a thing which would be repugnant to Buddhists as devout as are many of the Sinhalese charmers. A charmer whom I had various opportunities of observing was very careful not to injure animals, nor even insects which annoyed him in any way; I do not know, however, whether this man would practise charms causing serious injury to persons, since many charmers refrain from such. It is possible that the dislike to taking life applies only directly, and not when the action is produced through the agency of devils, instead of by the charmer's own hand.)

By blowing peppers.—A certain mantra having been recited (without elaborate ceremonial) over some peppers of a certain kind held in the hand, the peppers are taken into the operator's mouth and, being bitten into pieces, are blown out in the direction of the wind (the operator standing with his back to the wind). When the pieces are blown out, the victim simultaneously falls down, bleeding from the nose and ears, and, soon after, dies.

By flowers.—A *man's* grave having been opened, the operator goes into the excavation and charms the body until it sits up and protrudes its tongue, which is then at once cut off by the operator, for use as an object very powerful in sorcery. If flowers, together with a tongue thus obtained, be properly charmed, upon a "decorated chair," any one of the flowers, if thrown upon the victim, will cause

him instantly to fall down, bleeding from nose and ears, as though he were attacked by a devil.

According to another informant (who was not a charmer) an oil, very powerful for working evil, may be extracted from a tongue obtained in the manner described.

CHANGE OF APPEARANCE AND INVISIBILITY.

There is a charmed mixture of certain medicines, including the ashes of some hairs taken from a black cat, which, when rubbed upon the face near the eyes, makes the operator, although present in his own shape, appear to other people as a black cat. The assistance of the devil Bâhirâva (see "Thieves (Charms, etc.)") is invoked in the making of the mixture. The charming is not so dangerous as that used for the substance following.

There is a charmed mixture of certain medicines which, rubbed upon the face near the eyes, produces invisibility at night. The charming of the mixture is conducted in a grave less than seven days old, and is attended with extreme danger to the operator, as he summons the "sight" of three powerful devils who, should he make the slightest mistake, set upon him and kill him instantly.

THIEVES (CHARMS USED BY, OR AS A PROTECTION AGAINST).

Charmed sleep.—A stick of some one of the *pas-peṇgiri* woods is wrapped in a piece of cloth containing a mixture of the three powders *dummala*, *kaṭṭakumanchal* (frankincense), and *kekunamala*, and, shortly before being used, is dipped into coconut oil. The torch thus formed is taken to the house to be entered, and, having been lighted and a certain mantra recited over it, its smoke is blown through the keyhole of the outer door. The inmates of the house will, in consequence, not awaken until sunrise. (The torch is called *Bâhirâva-pandama* (Bâhirâva's-torch); Bâhirâva, a powerful earth-spirit (see below) is appealed to because the Sinhalese usually sleep upon the ground.)

A certain mantra (called "*Nidi-mantra*," "Sleep-mantra") is written upon a piece of palm-leaf which, held in the right hand, is exposed to the smoke of *dummala* powder thrown upon coals with the left. The charmed leaf is thrown into the house to be entered, whereby the inmates are caused to sleep soundly until the person who has thrown the leaf steps into cold water.

Charmed keys.—A key is attached to a cord, and is held by this, in one hand, by the operator, who, absolutely naked (without so much as a string upon his body), enters a stream or a body of water, up to his knees, to perform the ceremony. The operator holds in his other hand a lighted torch, while beside him floats a vessel containing *dummala* powder. Having taken up some of the *dummala*, he throws it upon the torch, and, swinging the key through the smoke thus produced, recites a certain very "serious" mantra 108 times. The charming having been completed the key is taken *immediately, no word being spoken* before its employment, to the lock which it is to open.

Miscellaneous charms.—Thieves sometimes employ a method (which is also used by friends to play a trick on a family) to cause a house to appear suddenly as if filled with serpents, whereupon the people in it rush out, leaving it unprotected. It consists in throwing a small quantity of a certain oil into the flame of a lamp. The oil is produced by placing the dead body of a whip snake (*ehetulla*), after having buried it for a day or two, in a vessel in the sun, and it is afterwards charmed in a cup formed from a human skull.

[See also "Change of Appearance, and Invisibility."]

Protection from thieves.—The *Pirit-yantra*, a yantra founded upon the *Pirit* sutra of Buddha, will keep thieves as well as evil spirits away from a house. There is another yantra, called *Aghoré* (?) which, framed and hung up, will protect a house from thieves.

Oil charmed in a certain manner, if burned during the night, will cause any thieves who may enter the house to come to the lamp in which it is burning, and, standing before it, with the palms together as if in salutation, to wait quietly until captured.

When valuable jewellery is to be interred with a person, charmed oil is sometimes rubbed upon the corpse's head, in order to prevent thieves from opening and looting the grave.

Bâhirâva is a very powerful devil who dwells within the ground, one of whose duties is the guarding of treasures hidden therein, so that only the rightful owners, the descendants of the persons to whom treasures formerly belonged, can obtain them.

Punishment of thieves.—Charms to cause injury or death are employed as a revengeful punishment for the thieves. If the thief be unknown, connection with him is established by means of something with which he has been in contact (such as earth from one of his footprints); should he be known, an effect more powerful, somewhat in proportion to the knowledge possessed, can be obtained. In one case, which occurred during my stay in Ceylon, a charmer whom I knew was called in to cause injury to a man who had run off with some money. The thief's mother, however, having heard of the plan to injure her son and fearing its terrible consequences to him, secured and returned the stolen money. In this instance the charmer received half the amount of the fee to which he would have become entitled had the money been obtained through his actual operations.

Detection of thieves.—For various methods of determining the perpetrator of a theft see "*Divination.*"

Gambling.

There are mantras for the charming of coins which, when placed as a stake or part of a stake, invariably (unless conquered by some more powerful magic) cause their owners to win. [A copy of one such charm, famous for its efficacy, from the Galle district, having come into my possession, I was begged (and

even offered presents of books) by several of my acquaintances, charmers themselves, who learned that I had it, for permission to make copies for their own use.]

See also "Amulets (Metallic Amulets)."

AMUSING AND TRICK CHARMS.

Under this heading are given charms performed for the amusement, sometimes malicious, of the operator, or of his companions, or in order to impress spectators with a sense of the charmer's power. It should be noted that charms regarded as amusing in their results are possibly merely enfeebled versions of charms to cause injury; thus, for example, the charm given in *Dem. Cey.*, pp. 65–67, to cause devils to throw stones incessantly at a house until the inmates are driven out, was described to me as a means of causing not very serious annoyance.

In the place of some of her eggs, seven areca-nuts are put beneath a sitting hen, and are allowed to remain until the other eggs hatch. After removal from the nest the nuts are kept until needed for the trick. When a drum (the noise of which may become monotonous, even annoying), which the operator desires to burst, is heard, he places one of the areca-nuts between the jaws of an areca-nut cutter, and having recited a certain mantra over it, closes the jaws of the instrument while the drum is sounding, thus causing, instantly, the membrane of the drum to burst.

If a palm-leaf upon which a certain mantra is inscribed be put beneath a mortar used for pounding rice, any woman who uses that mortar will let out wind in time with each of her strokes; if two women use the mortar together, both will be thus affected. When an occurrence of this sort takes place an investigation is made, and the charm, if it has been used, is at once revealed.

If a palm-leaf upon which a certain mantra is written be hung in a well, each woman who draws water from that well will find that her waist-cloth drops each time she puts her jar of water under her arm to carry it, causing her to put down the jar in order to readjust the waist-cloth. Investigation being made, the hanging palm-leaf is at once discovered and removed.

In order to attract attention Sinhalese call out *hoo*, a sound similar to that made by owls, to each other. If a piece of bark, taken from a tree upon which sit two owls hooting to each other, be charmed and buried by the door of a house, whenever a person comes out of that door he will think that he hears someone within the house calling him, whereupon, returning, he answers, and much confusion results.

(For a charm to cause a house to appear as though filled with serpents see "Thieves (Charms, etc.)")

If some paddy (rice in the husk) be put upon a clean cloth held outstretched by two men, and this cloth be struck, so as to make the paddy jump up and down, by a person who has previously recited a certain mantra over the hand with which he strikes, the grains will burst open and become like paddy which has been roasted.

If a certain mantra be recited by a person he is thereby enabled, having thrown his hair (long hair is commonly worn by the Sinhalese, and particularly by charmers) toward a wall or an archway, to cause it to remain attached there, sometimes so strongly as even to support his weight.

There is a certain kind of magical paste which, when rubbed upon the face just beneath the eyes, causes the person using it to appear, to persons about him, to be doing various extraordinary things, whereas he is actually doing nothing of the kind.

A performance of the same nature as "fire-walking" ceremonies was gone through for me at Colombo. The performer was a Sinhalese workman, who said that the mantra he used in it was a somewhat secret one which had descended to him through his father. The performance was gone through merely to illustrate to me, at a moment's notice, the power of magic, and no charge was made for it. Some Sinhalese who were with me at the time, appeared to be much impressed, although they had seen the trick done before. A piece of iron was heated to redness, while a small boy ran out to fetch a bowl of water. When the water arrived the performer stirred it with one of his tools, meanwhile muttering his mantra over it; nothing, I think, was added to the water. Having placed the piece of red-hot iron upon the ground, and having poured the charmed water over his foot, he placed the foot firmly upon the iron, keeping it there until the smell of burnt flesh became quite strong. He then exhibited his foot, which showed a fresh burn upon the thickened flesh at the heel, and finally stamped upon the ground with it, in order to show that it gave him no pain.

It is possible to charm a target (such as a coconut) so that, when it is hung up, marksmen cannot hit it. My informant (a charmer) told me that he had seen such targets set up on various occasions, and that even Europeans had been unable to touch them.

Divination.

To detect a thief.—The names of all the persons suspected of the theft having been written upon separate sheets of paper, and these having been charmed, all are together put into a fire. All the slips will be consumed, excepting the one which bears the culprit's name.

The names of seven persons suspected of the theft having been written upon seven slips of paper, the slips are laid out with a white cowry-shell opposite to each. The arrangement is then charmed, causing the shell opposite to the slip bearing the culprit's name (if it be there) to slide over to indicate it.

The names of all the persons suspected are written upon separate slips of paper, and each of these is then rolled up into the form of a cylinder. The set of papers having been divided into two parts, one of these is placed upon a man's head, the other upon the ground at his feet. Then, a pair of jointed rods having been formed, each by joining loosely the ends of two sticks of *burulla* wood, two other

men take each one end of each of these rods, and hold them by the arms of the first man, at the level of his shoulders, while a fourth man walks round the group fumigating them by means of *dummala* powder which he throws upon a pot of coals which he carries, and the requisite mantras are recited. The charming causes the joints in the rod to bend toward the pile containing the culprit's name—upward, if it be on the head; downward, if it be on the ground. The pile thus selected is divided into two parts, the other pile being rejected, and the ceremony of selection is repeated, until finally, through successive divisions and selections, one slip only, that which bears the culprit's name, is left.

A certain kind of table, having a circular top, and but one leg, which has been charmed, is employed. The persons suspected having placed their hands upon the top of the table, it leans toward the culprit, no matter where he stands in the circle, nor how he changes his position.

A fowl having been charmed, each of the persons suspected touches in turn the bird, which, silent when touched by innocent persons, will crow at once upon being touched by the culprit. As a means of proving that a person has actually touched the fowl, some oil, which will rub off on the fingers, is put on the bird's back.

By an ordeal.—In order to determine the truth or falsity of a statement, the person making it may be asked to step over something (such as the comb, the head-cloth, or a few hairs of the head) taken from the head of the person disputing it, while repeating at the same time the doubtful statement. Should the statement be untrue the person making it will, it is believed, injure himself severely by slipping, or in some other manner, during the trial, or, if not then, certainly within seven days.

During a religious ceremony—For divination by a *kapuwá*, during a dancing ceremony for the relief of an afflicted village, see "Curative ractices (Curing by invocation of deities)."

By professional diviners.—A book for divination used by itinerant fortune-tellers consists of a number of small ola-leaves (in one instance, twenty-eight), upon each of which is an answer to some question. The applicant, having concentrated his mind upon the question to which he wants an answer, places the cord used for binding the leaves together between them at random; the answer is shown upon the leaf thus exposed.

By omens.—Dung dropped upon a person by a bird flying above him is an omen foretelling circumstances which vary with the bird's species; similarly, dung left upon a sleeping person by a rat or a lizard is a means of foretelling future events. There are books which are consulted for the elucidation of these omens.

There are methods of determining, by the markings of a pregnant woman's blood-vessels, whether her child will be a boy or a girl.

Should something belonging to a person break, towards evening, after he has had a day of ill-luck, the omen is a good one, and indicates that the run of ill-luck is broken; if the thing broken is only of small value its owner is fortunate in escaping so easily.

CURATIVE MAGIC.

Devil-Dancing.

Miscellaneous Notes.—Some of the devils represented by the devil-dancer, with the aid of his costumes, are the devils who actually afflict the patient; others are powerful devils by whom the afflicting devils are controlled, and, in the ceremony, ordered to depart; and others (according to some explanations) are devils who are afflicted as the patient is afflicted, and who suggest that the afflicting devil transfer his "sight" from the patient to them, in the expectation that he will have brotherly compassion (as a fellow devil) upon them, and, after leaving the man, will afflict neither them nor him. A list of some of the more important of these devils may be found in *Dem. Cey.*

According to the statements of several devil-dancers the purpose of the performance appears in some cases (not in all; probably in some cases of possession) to frighten, not the afflicting devil, but the patient. Some of the costumes worn, with the action accompanying them, used at night (when devil-dances always take place) undoubtedly affect strongly persons who are not in their customary state of mind.

"Devil-dancing" (taking the term as generally used by the English in Ceylon) is of several types; that of most of the dancers who have been taken on tour to various parts of the world, and of those who, at Kandy, perform (in a manner, it need hardly be said, more spectacular than accurate) for the benefit of visitors, differs considerably from the type illustrated in the photographs.

The dresses used in the dances of the kind represented by the specimens are always, I have been told, red, black or dark-blue, and white. I have, however, seen a dress for representing a devil (though possibly not in a curative ceremony) in which a portion of a dark-blue dress was of an indeterminate orange-brown. Concerning the designs embroidered upon the dresses it was said that the use of lines composed of small triangles (this was in the Colombo district; near Galle, these seem to be replaced by borders of interwoven sinuous lines) in designs and borders is required, but that the flowers and other objects represented (such as cobras, which often appear in conventionalized form) vary according to the personal tastes of the dancers. The dresses and masks employed, which vary in form more or less with the district, are of qualities commensurate with the circumstances of their owners; for example, the costumes shown on Plate XIV, Figs. 1, 2, and 3, are of very good quality, whereas the masks shown on Plate XI, Figs. *k* to *q* inclusive, are very crude, and the dresses which accompanied them were of poor quality. The masks, which are quite often made by the dancers themselves are, for the kind of dancing illustrated, usually about eight or nine in number, and are not used for the representation of all devils; as may be seen in the photographs some of the representations use merely false sets of teeth, or goggles, or paint upon the face. The objects used in dancing are often lent by one dancer to another; when requests to see a dancer's

complete outfit were complied with it was frequently necessary for some of the pieces to be collected from friends to whom they had been lent.

The number and pay of the devil-dancers employed depend upon the wealth of the patient, and the seriousness of his illness. Should a cure not be obtained through the agency of the ceremony the dancers are, as a general rule, not paid. During the dancing the operator recites *yak-kavi* (devil's-verses), wherein, by giving the name, the parentage, the birth, the history, the attributes, etc., of the afflicting devil, he shows that devil that he, knowing all these matters, is the more powerful, and needs to be obeyed in his requests and appeals.

Outfits.—The following objects, forming Sets I, II and III, are from three charmers of a village near Galle. Sets I and II are the complete outfits, as owned by the performers (and with the small exceptions noted, as obtained). Set III comprises only a small part of the material required, and is, presumably, to be eked out by masks and costumes lent by other charmers. The owners of Sets I and III appeared to be of ordinary Sinhalese type ; the owner of Set II, a carpenter by trade, was of a rather low type, with a large, projecting jaw. The masks are all of wood ; those of Set II were made, the owner said, by himself. Explanations are as given by the owners.

Set I.

(*a*) A drum to be beaten by an assistant while the dancing proceeds. (Plate XIV, Fig. 5, shows a similar drum in use, near Colombo.)

(*b*) A pair of leg-pieces, for tying upon the lower leg (shown in several of the Figs. on Plates XIII and XIV), of leather, each with nine metallic bells. This pair was the only one which could be obtained from the dancers visited, in either the Galle or Colombo districts, except at an exorbitant price. It appears that a dancer, who must continue his exertions often for a long time, becomes accustomed to a set of bells, and finds it difficult to dance with a different set. One leg-piece is shown on Plate XI, Fig. *b*.

(*c*) A jacket covered with bits of blue cloth attached only at their ends, giving to it a shaggy appearance. Generally worn with the opening at the back. (A similar jacket is shown in use in several of the photographs on Plate XIII).

(*d*) A pair of trousers, of material like that of (*c*).

(*e*) A cap, of material like that of (*c*).

(*f*) A cap, similar to (*e*), but smaller.

(*g*) An embroidered red jacket (no skirt with it).

(*h*) A blue canvas jacket (no skirt with it).

(*i*) A cap covered with bunches of red thread, giving the appearance of a great head of shaggy red hair.

(*j*) A red tarboosh (cap in the form of a truncated cone, worn by Mohammedans of the Nearer East), to be used in the dress for Demala-Sanniya (devil in the form of a Tamil).

(*k*) A black mask (Plate XI, Fig. *k*); Demala-Sanniya.

(*l*) A black mask (Plate XI, Fig. *l*); Amukku-Sanniya.

(*m*) A black mask (Plate XI, Fig. *m*); Nâga-Sanniya (the coconut-fibre forming the beard is to be worn round the neck).

(*n*) A black mask (Plate XI, Fig. *n*); Golu-Sanniya (the lower jaw seems to be missing).

(*o*) A black mask (Plate XI, Fig. *o*); Veḍi-Sanniya.

(*p*) A black mask (Plate XI, Fig. *p*); Kora-Sanniya, a devil for representing a person afflicted by a malady causing lameness.

(*q*) A dark-green mask, with great red lips (Plate XI, Fig. *q*); Copala-Sanniya (perhaps Gopaḷu-Sanniya, the devil who afflicts cattle (?)).

(*r*) A large false mouth, with teeth formed of cowry-shells (Plate XI, Fig. *r*).

(*s*) Upper or lower sets of teeth, formed of shells (one cowry-shells, two clam-shells) sewn upon cloth, for inserting in the mouth.

(*t*) Upper and lower sets of teeth, formed of cowry-shells.

(*u*) A pair of goggles, with green glasses, to give the effect of large green eyes (a similar pair is shown in use in the picture of Daha-aṭa-Pillépali (Plate XIV, Fig. 1). (Not obtained.)

(*v*) A musical pipe (Plate XI, Fig. *v*) used in certain dances.

(*w*) A snake (cobra) to be used with the Nâga-Sanniya costume. (Plate XI, Fig. *w*.)

(*x*) A small wooden doll, painted pink, in the form of an infant (Plate XI, Fig. *x*). Said to be used in a dancing ceremony to ease the pains of labour (see note to "Curative Ceremonies (Barrenness)"). There is a small nail in the top of the head, apparently for attaching a cord for suspension.

(*y*) A canvas bag, of ordinary form, for containing the objects and carrying them about.

Set II.—

(*a*) A pair of leg-pieces, similar to those of Set I. (Not obtained.)

(*b*) A jacket, like (I, *c*).

(*c*) A cap, like (I, *e*).

(*d*) A pair of trousers, such as are worn by Europeans, blue, for wearing with (*b*) and (*c*). Very dilapidated. (Not obtained.)

(*e*) A cap to which many bits of yellowish rope are attached, for giving the appearance of a head of unkempt long hair. To be used as part of the costume for Maru-Sanniya.

(*f*) A cap of thin red cloth, probably corresponding to (I, *j*).

(*g*) A costume of blue cloth, with embroidery and applied red and white decoration. A jacket, a long underskirt, and a short overskirt (similar to costume, from Colombo district, shown on Plate XIV, Fig. 6).

(*h*) A crown, made of paper, painted with devils' faces and partly covered with sheets of mica, and with wings at the sides. Similar to III (*d*), shown on Plate XII, Fig. 5; and to the one shown in use in Figs. 1 and 3 of Plate XIV.

(*i*) A black mask, with projecting eyes, a low forehead, tusks, and a protruding tongue; Maru-Sanniya.

(*j*) A black mask, with a snake rising from the forehead; Nâga-Sanniya.

(*k*) A black mask (Plate XII, Fig. 1), with lower part of face projecting, with a small beard (not seen in photo), and upper teeth of shell; Kana-Sanniya.

(*l*) A black mask, with hair and beard of fur; Golu-Sanniya.

(*m*) A black mask, low-browed, with high cheek-bones, and upper and lower teeth (of wood) showing; Veḍi-Sanniya.

(*n*) A black mask (Plate XII, Fig. 3), with beard made of wool; Gulma-Sanniya. When this mask is used the mouth is filled with water, and noises are make in the throat, after which the water is suddenly spat out, as if vomited up.

(*o*) A black mask (Plate XII, Fig. 2); Dêva-Sanniya.

(*p*) A black mask, with the mouth twisted to one side; Kora-Sanniya. (See I, *p*). (Possibly, properly, Amukku-Sanniya.)

(*q*) A false mouth, with teeth of shell, and beard, arranged to give a twisted appearance to the face when worn (Plate XII, Fig. 4).

(*r*) A set of upper, and a set of lower teeth, to be inserted in the mouth, producing thus a horrible tusked appearance; one set, with a pair of small boar's tusks (or large rodent's teeth), to go under the upper lip; the other, with pieces of shell representing teeth, to go under the lower lip. When Maru-Sanniya is represented (and the mask No. (*i*) is not employed) the face is painted with soot (taken from the bottom of a cooking pot), the two sets of teeth are put into the mouth, and a beard of fibre rope and a moustache of bear's hair are put into place; the cap No. (*e*) is also worn. Fearful noises are made with the mouth, the inserted sets of teeth aiding in their production.

(*s*) A musical pipe, like I (*v*).

(*t*) A snake, like I (*w*).

(*u*) A cotton cloth bag, for containing the objects and carrying them about.

Set III.—

(*a*) An embroidered red jacket (Plate XII, Fig. 6).

(*b*) A cap of woolly substance.

(*c*) A wig of black hair.

(*d*) A crown (Plate XII, Fig. 5), made of paper, painted with devils' faces and partly covered with mica, and having several small circular mirrors attached. (See notes to II, *h*.)

Representations of devils.—The following list relates to a series of photographs

of representations of devils given by a devil-dancer (who was, by profession, also an astrologer) at a village near Colombo; the titles and their explanations are as given by the performer and verified by another charmer who was present. The intention was that eighteen devils should be shown, but one (3), by mistake, was represented twice, although by the use of different materials, so that one representation is lacking.[1] The photographs which are reproduced on Plates XIII and XIV show the principal features of the costumes. The changing about of the parts of the costumes, and the variation of the features with paint (soot, and white powder), false features or masks, are more considerable than the photographs indicate. The costumes and masks used were of the same nature as those described as included in the outfits from Galle; the costumes worn in Figs. 1, 2 and 3, Plate XIV, are, however, of better material and workmanship than the corresponding ones from Galle, and are ornamented partly with large glass beads. The leaves, which have so large a share in a number of the costumes, are those of the *burulla* (or *gurulla*) tree. A very fair idea of the normal appearance of the performer may be obtained from Fig. 1, Plate XIII, in which he has prepared himself to represent a Tamil. As lack of time prevented him from assuming the two costumes illustrated in Figs. 1, 2 and 3, Plate XIV, two assistants of his are shown in them. The names of the devils are in many cases descriptive; thus, *Weḍda* is a Veddah, *Gini* is heat, *Śītala* is cold, etc.

(1) Demala-Sanniya; a head, or principal Tamil devil, who orders the inferior Tamil devil afflicting the patient and causing him to speak unknown words, to relieve him. Plate XIII, Fig. 1.

(2) Maru-Sanniya; a devil who comes near to dying men. Plate XIII, Fig. 2.

(3) Amukku-Sanniya; a devil for representing a person ill with a malady which twists the features (or, as shown in the second representation of this, which twists the body). Plate XIII, Fig. 6.

(4) Nâga-Sanniya; a devil for representing a person with a malady which causes him to dream of all kinds of serpents upon his body. Plate XIII, Fig. 3. (The cobra shown dangling in front is like No. *w*, Set I; Plate XI, Fig. *w*, and No. *t*, Set II.)

(5) Kana-Sanniya; a devil for representing a person afflicted with a malady which causes blindness in sickness. Plate XIII, Fig. 4.

(6) Golu-Sanniya; a devil for representing a person afflicted with a malady which causes dumbness in sickness.

(7) Veḍi-Sanniya; a devil who afflicts with a sickness which kills as quickly as a gun is fired, *i.e.*, instantaneously. Note the gun in Plate XIII, Fig. 7.

(8) Weḍda-Sanniya; a devil in the form of a Veddah (an aboriginal of Ceylon) who afflicts with a sickness which kills as quickly as an

[1] I think that the missing representation is probably that of Kora-Sanniya, a devil for representing a person who is lame: compare Sets I and II, Nos. (*p*). For list of eighteen devils causing effects of these kinds, see *Dem. Cey.*, p. 26.

arrow reaches its mark; *i.e.*, not quite instantaneously. Note the false bow and arrow in Plate XIII, Fig. 8.

(9) Vevuḷun-Sanniya; a devil for representing a person afflicted with a malady causing trembling of the body. (The performer, in posing for this photograph, wished to keep his person continually trembling, in the manner proper to the costume, saying that if he were to remain motionless, as required for the exposure, the representation would not be complete.)

(10) Ṣítala-Sanniya; a devil for representing a person afflicted with a malady causing him to be cold.

(11) Gini-Sanniya; a devil for representing a person afflicted with a malady causing him to burn with terrible heat. Note the small fire in Plate XIII, Fig. 10.

(12) Bíta-Sanniya (Grünwedel's Abûta-S. ?); a devil for representing a person, afflicted with melancholia, who does not care to go about, but likes to lie upon a mat (shown in Plate XIII, Fig. 5) during the whole day. During the performance charmed rice is spat out, and a charmed pot is dashed upon the ground and broken, in order that, when the dancer has brought the devil's "sight" from the patient to himself, its influence may be broken.

(13) Okkara-Sanniya (a name of Gulma-S.?; compare No. *n*, Set II); a devil for representing a person afflicted with a malady causing vomiting. Plate XIII, Fig. 9.

(14) Dêva-Sanniya; a devil who destroys any village on which he "takes sight," by causing its people to sicken, one after another. Note goggles on the eyes. Plate XIII, Fig. 11.

(15) Kôla-Sanniya; a head, or principal devil of those causing madness; upon seeing this devil the afflicting, and minor, devil removes his "sight" from the patient.

(16) Kumára-Pillépali; a head, or principal devil of the eighteen devils who cause sickness; before afflicting *women* with sicknesses the lesser devils must obtain his permission. Plate XIV, Fig. 2, back-view in Fig. 3. The dress is red with white ornamentation, and the head-kerchief of three colours—red, white and black—only. The decorations of the costume are made of fresh young leaves of the coconut-palm. One of the torches held is shown on Plate XII, Fig. 8.

(17) Daha-aṭa-Pillépali; a head, or principal devil of the eighteen devils who cause sickness; before afflicting *men* with sicknesses the lesser devils must obtain his permission. Plate XIV, Fig. 1, back-view in Fig. 3. The dress is black, and the crown is of paper painted with devils and covered with mica (see Plate XII, Fig. 5, for similar crown; compare also Sets II and III.)

Punishing Devils.

There are demons of a minor variety (described to me as being a kind of evil ghost; probably identical with the spirits of those who have died with a feeling of hatred (*Dem. Cey.*, p. 19)) who may "possess" a person, or otherwise cause him great trouble and misfortune. A person afflicted by a demon of this kind applies to a charmer, who may proceed to imprison the offending spirit, with the double object of ridding the victim of his immediate attentions and of frightening him so that he will never return after his punishment is completed. A time-limit for the imprisonment is always set, and named in the ceremony—seven hours, seven days, seven weeks, seven months, or, at the utmost, seven years—at the expiration of which the charm ceases to act and the demon becomes free. A charmer who fails to set a limit of this kind commits a great sin, since he punishes the unfortunate demon too severely, and is very likely thus to bring misfortune upon himself. For this reason, even if his employer does not wish him to do so, a charmer always sets a time-limit, seldom one of the shorter periods, or the longest, most often seven months. Three methods of imprisoning demons are given below.[1]

By nailing.—Having charmed an *iron* nail, and also the tree to which the demon is to be affixed—for one kind of demon a jak-tree is taken, for another a *ruk-attana*-tree (*Alstonia*, or *Echites, scholaris*)—the operator charms the demon himself so that he stands against the tree, a change in the colour of the bark indicating his position, and then drives in the nail. The tree is not injured by the operation.

By tying.—Seven white threads, each about 2 to 3 feet long, are prepared, and in them a loop is made which is set behind a betel-leaf resting upon a suitably "decorated" chair (table of offerings). The operator proceeds with the charming until, at a certain point, the betel-leaf falls forward, pushed by the demon's hands, when the ends of the threads are at once pulled, closing the loop tightly round the demon's wrists. The threads, holding the imprisoned demon, are then taken to a tree having two limbs separated by a distance equal to about the height of a man, and, with an accompaniment of charming, are tied to the upper limb. The demon, unless set free before, remains fastened in place, with the lower limb to rest himself upon, until the expiration of the sentence. If by chance some other charmer, or even an ordinary person acquainted with the proper mantras, sees the knotted string upon the tree, he may set the demon free by untying the knots, since he thereby acquires merit. But should the demon be freed by a person ignorant of the charms proper to the occasion, he will apply his evil attentions to his rescuer.

[1] In *Dem. Cey.*, p. 102, reference is made to a method whereby a possessing demon is "bound and nailed" to a tree. A nail made of an alloy of five metals is charmed and driven into a tree, after which a saffron-stained thread, similarly charmed, and knotted, is coiled round the nail.

In *Eth. N. in S. India*, p. 313, is given a method in which the demon is caused to climb a tree, into which three iron nails, below which the demon cannot descend, are driven. Compare also (*ibid.*) pp. 329 and 331.

By throwing into the sea.—A box, made either of an alloy of the five metals or of bell-metal (an alloy considered especially suitable for some kinds of charming), has placed within it a mixture of a considerable number of substances, ground together with a little *ghee*, and one end, coiled, of a saffron-stained thread, and, with its cover open a little way, is charmed upon a "decorated chair." As the charming proceeds, the thread gradually coils itself within the box, until it is entirely within. At the moment the end of the thread disappears the lid is snapped down, imprisoning the demon within the box, where he may sometimes be heard making a scratching sound. Then, in a boat, the box is taken out to sea, and, the boat having been stopped and certain mantras recited, is dropped overboard.

CURATIVE PRACTICES.

Under this heading are grouped, mostly under the troubles for whose relief they are applied, methods of curing by means of ceremonies, either magical or more or less religious in nature; of performances to which no occult character is attached; of medicines, applied either internally or externally; and of amulets, whose virtues may be either intrinsic or acquired. Amongst the principles utilized will be found those of the transference of the trouble to some inanimate object, the decrease of the trouble in sympathy with something decreased by the operator, the cutting of the trouble in sympathy with something cut by the operator, the transference of curative magical virtues to a patient by means of fumigation or by the passing of objects over his body, the use of charmed water (or the "milk" of coconuts) for sprinkling or for drinking, the fixation of charms by the tying of knots, and many others. Other matter relating to the subject may be found under the following headings:—"Protection of infants," "Protection of cattle," "Use of garlic in magic," "Use of iron in magic," "Impurity (Psychical uncleanness)," "Devil-dancing," "Punishing devils," "Votive offerings," and (in various divisions) "Amulets."

Charmed medicines.—Charmed medicines, which are used very extensively by the Sinhalese for curing people or animals, may be taken internally, applied externally, or carried as amulets. They include natural substances, special compounds, and ordinary medicines (such as are prescribed by physicians) to which an additional efficacy has been imparted by charming. The recipes given for the preparation of the special compounds often give the mantras to be used for charming them, as well as the ingredients and the proportions in which these are to be combined.

Charmed medicines are also largely used for protective and for magical purposes, references to a number of which may be found under the headings of various maladies, and of "Amulets (Medicinal substances)," "Charms to secure favour," "Amusing and trick charms," and "Change of appearance and invisibility."

For method of protecting medicines while being made see "Amulets (Miscellaneous notes)."

Curing by charmed threads.—A "decorated chair" having been prepared, three

threads (or in some cases only one) yellowed with saffron are hung upon its back, and charmed by means of a ceremony of the usual kind. When the ceremony is finished the operator takes the threads at one end, and, reciting a certain mantra over them, withdraws them from the chair. Taking them to the patient, he lays them upon the patient's head and recites a mantra over them. He then ties one thread round the patient's neck, letting the two others rest upon the patient's shoulder, a second upon the arm, holding the third meanwhile in front of the patient's body, and the last round the waist, in each instance accompanying the tying by the recitation of a mantra. (When one thread only is used the latter parts of the operation are, of course, omitted.) The patient should keep from impurity during the seven days following the ceremony.

Another kind of charmed thread is called *epa-núlá* ("bail-thread"), being for the purpose of "bailing-out" the patient from the devil who afflicts him. The thread, which is coloured with saffron, is knotted seven times, a separate mantra being recited seven times for each knot, and the knot being drawn a little closer at each repetition, until at the seventh it is pulled quite tight. A vow is made, in addition to the performance of the charming ceremony, to the afflicting devil that when the sickness has been removed a further ceremony, at which the thread will be broken, will be executed. After the thread has been removed at the second ceremony, it is thrown by the patient into running water, or is burned in the flame of a magical torch, the idea underlying its disposal thus being (according to a charmer) somewhat to the effect that as things are washed away by water, or burned away by fire, so has the affliction been removed.

The virtues are imparted to another variety of curative threads by means of the blessings of a priest.

On Plate XV (A), Fig. 1, a curative thread with twenty-four knots, from a man's wrist, is shown. See also "Bleeding."

Curing by invocation of deities.—A picture of the deities of the nine planets is mounted upon a frame of strips of bamboo, being held in place, by strips of the white inner bark of a plantain tree, along the lines separating the deities one from the other. This is brought into the patient's presence and is placed facing him, but hidden from him by a white cloth held up in front of it. Dancing and the recital of verses are then proceeded with until, at a certain point, the picture is exposed to the patient's view, and it remains so until the conclusion of the ceremony.

For the relief of a community attacked by an epidemic there is a ceremony, performed by a *kapuwá*, in a temporary building (or "shed") erected especially for the purpose. A picture of the deity Kandaswámi is put up within the shed upon the rear wall, and the villagers, including all the patients who are able to come, salute this picture upon entering the shed. The *kapuwá* dances in a decorated space before the shed, and during his performance, having summoned the malignant devils who caused the epidemic, tells them of Kandaswámi's power (which, including the ability to send these disease devils away from their victims, will be

exerted if necessary as a return for the pleasure given by the attentions paid). The malignant devils, seeing Kandaswámi's picture before them, become terrified, and remove their "sight" from the afflicted community. With money, which has been collected before the ceremony, rice and vegetables (excepting a few kinds) have been purchased, and during the ceremony this food, without the addition of any flesh (even that of fish), is cooked, but cooked entirely by men. The cooked food is distributed at the conclusion of the ceremony, a part being eaten by the persons present, and the remainder being carried very reverently, and so carefully as not to lose the least particle of it, to be eaten by those villagers who were unable to come.

Betel leaves are brought before the ceremony, by persons wishing to know something of their future, as a present to the *kapuwá*. At a certain point in the ceremony the *kapuwá* stands upon burning coals, trembling, and speaks, in a language not understood by those present, to the deity. He then tells an attendant to bring to him the various persons whom he names, and who have given him the betel leaves, and then, as each is brought to him, he predicts as to that person's health, business, profession, fortune, etc., and advises as to what should be done to avert any ill-luck which may threaten.

See also "Devil-dancing."

Employment of votive offerings.—When a vow is made at a Buddhist or Kapuist shrine a small coin is given; after the request has been granted a votive offering is presented to the shrine. The offerings are generally of silver, and of the nature of (*a*) representations of the objects in connection with which the vows were made, (*b*) gifts to the deities, or (*c*) representations of the deities. The standard price for an ordinary silver offering appears to be 25 cents ($\frac{1}{4}$ rupee), of which one-half is supposed to be for the material and one-half for the work, although actually the value of the silver used in such an offering is often less than $12\frac{1}{2}$ cents. Gold offerings of the same type, though very thin, are, of course, more expensive. These are the offerings commonly given, but there are others given by wealthy people, wherein the spirit, rather than the mere letter (as in those quoted) of the promise made, is adhered to.

The offerings are made by special silversmiths, and must not be made by people of low caste; they should be kept from any contamination, either physical or ceremonial, before presentation. After they have been given they should not be taken away from the shrine. It appears, however, that they may be bought by persons wishing to make offerings, but only to be returned immediately. When enough of them have accumulated they are made into a gold or silver image by a silversmith connected with the temple. It is believed that a curse will fall upon persons who make other things from them, wherefore ordinary silversmiths will have nothing to do with old votive offerings.

Sometimes a coin is vowed in the event of a cure, and is wrapped in paper and tied upon the afflicted part of the patient, being retained there until the cure is considered to be complete, after which it is taken to the shrine at which the

vow has been made and is tied, in a bit of rag, to the railing in front. Should the patient die the coin is given to the poor.

Gem miners, after success in their operations, present some rough precious stones, of poor quality and of very little value, to the shrines at which they have made their vows.

The offerings shown on Plate XV (B) are all from one temple, and, unless otherwise noted, are of silver. Their forms and purposes (as explained to me) are as follows:—

(1–5), five male figures; (6), one gilt plate with male figure; (7, 8), two gold male figures; (9), one female nude figure; (10, 11), two female skirted figures: given after the successful accomplishment of any result requested.

(12, 13), two boys (indicated by small size); (14), one girl: given after a safe delivery (or, probably, when a child has been cured, etc.).

(15, 16), two eyes (large size indicates that they are men's); (17), one eye (small size indicates that it is a woman's): eye troubles cured.

(18), one tongue: tongue cured or speech restored.

(19), one throat (a short tube); (20), testicles; (21), one leg; (22, 23), two arms: cure of the parts represented.

(24), one dug-out canoe; (25), one flat-bottomed boat: promised when the boat is begun, and given when the boat is placed in the water, to cause the boat always to be protected by the deity to whom the offering has been made.

(26), one house (formed like a shed): promised when the house is commenced, and given when it is finished, to cause the house always to be protected from fires, floods, or like catastrophes.

(27), one plantain tree; (28), one coconut palm: promised when a new planting is started, and given when it commences to bear, being bought with money obtained for the first-fruits of the planting.

(29), one field (of poor quality gold, gilded): promised by a person wishing to obtain a plot of land, or disputing or about to go to law about land, and given in the event of his success.

(30), one elephant; (31, 32), two bullocks: success in a matter connected with the animal represented.

(33), one cobra: a cobra who came often to a house (and could not, because of the occupant's religious scruples, be killed) has been caused to remain away. (The extended position indicates that the snake is departing.)

(34), one spear (attribute of a deity); (35), one sacred lamp; (36), one chain (probably, in this case, the length of a child's height): there has been promised, in the event of success, a silver object of the kind represented.

(37, 38, 39), three coils of wire, each the length of a person's height: given after a result desired has been attained, in fulfilment of the promise of a gift as high as the applicant.[1]

(40–46), seven plates bearing the figure of the deity Vibhísana (who cures the sick, gives children to the childless, etc., whose shrine is tended by a *kapuwá*); (47), one gold plate bearing figure of Vibhísana: given after success in a matter in which the deity's aid was invoked.

Curing by substitution.—In one system of curing the operator, having protected himself by charming, offers himself, mentioning the various parts of his body, to the afflicting devils as their proper prey. These devils, however, when they have transferred their "sight" as suggested by the operator, find that they cannot injure him, because of the charming by which he is protected.

Effect of evil eye or envy.—The hands and the body should be washed, one morning, the evening of that day and the following morning, with the water in which a blacksmith has quenched his iron.

Some water from a "new well" (see "General Notes (Miscellaneous notes)") having been put, together with a twig of a lime-tree, which has naturally seven leaves (none having been removed) into a new pot and charmed, the patient is sprinkled with the water by means of the twig.

Seven limes (or lemons) are charmed by means of a mantra and fumigation with *dummala* powder, and are then placed with some of the wild fruits of the *ahu* tree (*Morinda citrifolia* or *Morinda tinctoria*), the sight of which being feared by devils, will keep such away from the limes. Each lime in succession is placed between the jaws of an areca-nut cutter, and is held over some part, from the crown of the head to the feet, of the patient's body, when, a certain mantra having been recited, it is cut by closing the jaws of the cutter.

Effect of sorcery.—A pumpkin, upon which is drawn the picture of a man (representing the charmer who performed the injurious ceremony), is charmed, upon a "decorated chair," by the performance of dancing and the singing of charming verses, interspersed with blessing verses at intervals, during an entire night. In the early morning the operator, accompanied by three assistants, goes to a stream or a body of water, the charmed pumpkin, covered by a white cloth held by two men walking respectively before and behind it, being carried on the head of the third assistant. The operator, upon arrival, recites a mantra over the water in order to protect Mani-mekhalá-wa (?), a water spirit, from any harm arising from the forthcoming ceremony, and then having received it from its bearer, places the pumpkin in the water with the picture uppermost. Then, taking a knife which has been suitably charmed, he strikes its point upon the stomach of the figure, whereupon the devils immediately cause the pumpkin to turn in the water, in such a manner as to be cut in two by the knife; at the moment that the division takes

[1] This explanation differs apparently from that given in *Eth. Notes in S. India*, p. 353, where the wire is said to *represent* the applicant, seemingly in like manner to a human figure.

place the operator and the pumpkin are together drawn beneath the surface, and the operator becomes insensible. When, a moment later, the operator returns to the surface, he is revived by his assistants, by the use of water, which, in anticipation of its need, has been previously charmed. If the operation has been successful the halves of the pumpkin and the water nearby will be red.

The operator next goes to the patient and dances and recites verses, accompanying his actions by the taking up in his right hand of 108 small wicks, in succession, each of which he lights from a flame in his left hand, and then extinguishes in a dish of water containing some areca-flowers. He then takes eight limes, and, holding each in succession between the jaws of an areca-nut cutter and having recited a mantra, cuts it; of these limes, seven are, when being cut, held over various parts, from the crown of the head to the feet, of the patient's body, after which the eighth one, held in the cutter, is moved up and down three times in front of the patient, in order that any part omitted by the seven may be included before it is cut. The pieces of the limes are put into the water containing the extinguished wicks. By this method not only is the patient cured, but the charmer (not his employer), who caused the injury, has his charming turned back upon himself.

Bleeding.—Bleeding should always be stopped as quickly as possible, because the least appearance of blood attracts Ríriyaka (the devil of blood), who will endeavour to make the patient ill, in order to obtain more of his blood. (See also "Injury of Enemies.")

(The following method is applied only for the cure of prolonged bleeding due to natural causes, and not for that of bleeding due to sorcery.) A string formed of a red, a black, and a white thread twisted together is charmed, hung upon the back of a "decorated chair," in some spot frequented by the devils, and is then taken to the patient. The patient having lain down on his back, the string is placed upon his head, and a certain mantra is recited. It is then pulled over the whole length of his body, being stopped in order that the mantra may be recited at each point, at the forehead, the nose (where its effect covers the openings for the eyes and ears as well), the mouth, the throat, the breast, and the navel, seven points in all. Then the string is drawn to, and stopped at, the private parts, where another mantra, one of an abusive nature, is said. Finally the string is tied about that part of the body where its effect will be greatest: for bleeding from any of the openings of the face, round the neck; for bleeding from the lungs, round the arms; for prolonged menses, round the waist, the patient having first drank of charmed water, or of the liquid of a charmed coconut.

Children's Sicknesses.—(The following method is applied for the cure of sick children between the ages of three days and seven years.) An image made of boiled rice, with the features marked in colours, is placed in a basket of the kind used for cleaning rice, and is brought, hidden behind a cloth held up as a curtain by a couple of men, into the presence of the sick child. Verses, requesting the deities' permission to go on, having been recited, the cloth is removed and the

operator proceeds to dance, holding a bell in one hand and an areca-flower in the other, meanwhile reciting devil-dancing verses interspersed (at intervals separated by 108 verses) with mantras. At the conclusion of this dancing he takes a handkerchief of three colours (red, black and white, presumably), and, after dancing with it, rubs it three times lightly over the child, as though rubbing the disease away, and causes the child to push its hands outward, over its face, three times, as though clearing the disease away, after which the handkerchief is thrown upon the rice image. Finally some one (such as a servant) takes the basket with the image in it to a cross-roads (silence, not looking behind, etc., are not essential in this part of this ceremony), where they are left. After a time (usually between half an hour and one hour) the evil influences transferred to the image depart from it, and the birds, which until then have kept aloof, come and eat the rice. The handkerchief, when the work in which it figures is finished, is taken by the operator to be kept for similar use on future occasions.

Dogbite.—The patient is treated in the following manner in order that he may not develop hydrophobia. He is taken to an empty house, and is supplied entirely with perfectly new things—clothes, pillows, sheets, eating-, drinking- and cooking-vessels, etc.—which are kept exclusively for his own use during his treatment, and he is never left unaccompanied by some other person, even for a moment. A charmed thread is put round his neck, another upon his arm, and a third round his waist, and he is sprinkled, each morning and evening, with saffron-coloured water, which is also thrown about the house. At an early hour of the morning of the third day he is taken to a stream nearby (provided that it is not frequented much by women; should it be, a "new well" is dug), and he is bathed with exactly seven potsful of water from it charmed in a new pot. He is then brought back to his house, where he is kept during four days more (making a total of seven days of treatment), after which he is free to do as he pleases, excepting that during the period of three months following he should not eat pork, and should preferably remain otherwise uncontaminated by impurity.

Snakebite.—There are stones for the cure of snakebite, black, and of considerable value, which, when placed upon the wound, adhere to it until all the poison has been withdrawn, after which they fall off. In order to remove the poison from the stones, these latter are put into cow's milk for a time after being used. (A stone of this kind, appearing, from the description, to be of the ordinary Indian type, was kept by the high-priest of the temple at my informant's village, and was lent to people who required its services.)

There are also charmed medicines, artificially formed, the action of which in withdrawing the poison is like that of the natural stones.

Snakebite may be cured by the use of charmed threads, by exposing the patient to the smoke of charmed substances, or by the recitation of mantras.

It is sometimes necessary to give instant treatment for snakebite while still at a distance from the patient, as when word has been brought to a charmer who cannot reach the patient quickly. When such is the case the operator charms, by means

of a certain mantra, his right hand, and then lightly strikes the messenger's head or face with it.

Ratbite.—A piece of gold, having been charmed, is rubbed in woman's milk and drank.

Choking by bones or food.—The patient, or someone by him, recites a certain mantra over some food, such as cooked rice, or a fried plantain, which is then swallowed. Or the same mantra may be recited over some water, which is then drank.

The same mantra may be recited over the palm of the hand, which is then used to pat the patient's back.

A mantra (not specified, presumably the same as above) is recited, either by himself or by someone by him, over a hair of the patient's head, which hair is then pulled out.

Drunkenness.—Seven small stones (pebbles), having been charmed on seven different days, are dropped into some arrack, which, given afterwards to the patient to drink, causes him thereafter to have a distaste for arrack.

A charmed leech is allowed to swim about for a time (not too long, lest the liquor become poisoned) in some arrack, which, afterwards given to the patient to drink, gives him a distaste for arrack.

Barrenness.—The woman is dressed in white, and dances are performed and verses recited before her. A new earthen pot containing some coconut leaves and a little earth, and decorated with young coconut leaves, of some of which a handle is formed, is kept near to her during the ceremony, and is hung up in the house when the ceremony is completed. At the time of the ceremony a vow is made to the devil *Kaḷuyaka*[1] that if a child be born, dances, offerings, etc., will be given to him. Soon after a child has been born, as a result of the ceremony, it is taken to a *kapuwá* at a temple, who blesses the child, and is told by the mother that the child is the result of a vow which, within a time which she specifies, she will fulfil. The *kapuwá* then makes himself responsible, to the benevolent devil by whom the child has been given, for the child until the vow is fulfilled. Usually the *kapuwá* refuses to assume responsibility for the child for more than a few months, but, except for this, it appears that any period, even one of years, may be allowed for the accumulation of money sufficient to pay for the offerings and dances required. The children born as a result of this ceremony are always fine healthy infants. Should it happen that, for some reason, the vow is not fulfilled, both mother and child will die, and other misfortunes will follow.

[1] It was explained to me that children are given by *Kaḷuyaka* ("Black Devil"), and in the ceremony following this one the idea appears again. In *Dem. Cey.*, p. 28, he is spoken of as exerting his malign influences particularly upon women and children; he has, however (p. 27), an apparitional form, called the "Black Demon of the Dewol Gods," which, from the nature of these ceremonies, is that, I imagine, in which he here appears. The explanation given did not seem to suggest that *Kaḷuyaka* appeared as a conquered and subservient devil.

The woman, clothed in white, stands within a compound decorated for the occasion. A devil dancer dressed in woman's clothing, and having breasts formed by stuffing out the bosom of the jacket (see Plate XIV, Fig. 8) bears in his arms a wooden doll (Plate XII, Fig. 7; see also No. *x* of Set I[1] of the devil dancers' outfits) representing a child, which he rocks to and fro as if to hush its crying. After dancing, this man goes about, from one to another of those present, collecting money (explained to me as similar to money paid to a physician) from them. When the collection has been completed, a second man, dressed to represent *Kaḷuyaka*, who has meanwhile remained hidden from those present, suddenly gives a shout, rushes out with a second shout, and then, taking the doll from the performer who has been dancing with it, and shoving him forcibly away, gives a third shout. Then, with great courtesy, and showing much respect towards her, *Kaḷuyaka* presents the child to the patient, who bends her head in thanks. The doll is taken by the patient round all the company present, by whom it is kissed and fondled just as if it were a real child, and it is finally taken home by the patient, to be kept in a cradle till she conceives. When conception is assured, the doll, accompanied by many presents, is returned to its owner.

The basis of the following medicine is an eastward-growing root of the *Natnáran*-tree (Common citron, *Citrus medica*), ground with the milk of a pure-black cow. Before the root is removed from the ground a ceremony is performed over it. A space having been cleared and cleaned all around the tree, some fresh saffron-coloured water, drawn in a new pot, is sprinkled about it by means of an areca flower, and a kind of fence, formed of small bamboo sticks and young coconut-leaves, is set up round it. Oil made entirely by a man (not by a woman) from a coconut which, to ensure its cleanliness, has been brought (not fallen, nor been thrown) down from its tree, is put into two lamps formed of the halves of a papaya fruit or of a young coconut, with wicks of clean-washed cloth twisted by hand (not rolled, as is usual, upon the thigh), which are set beneath the tree. Beneath the tree there are also placed some sweet-scented flowers upon a plantain-leaf, some bits of camphor upon betel-leaves, some scented water, etc. At morning and evening of three days the lamps are lighted, incense-powder (the savour of the smoke of which is liked by the benevolent devils and hated by the evil) is burned, and ceremonies, including the recital of verses resembling mantras, are performed. When the charming of the root selected is completed it is removed, early in the morning, and taken to a house. It is then ground, with the milk of a fine pure-black cow, upon a clean stone which, together with the place where it rests, has been sprinkled with saffron-water for purification. The substance is charmed, before being removed from the grinding stones, upon the completion of the grinding, and then that upon the upper stone (the grinder) is mixed with some

[1] This second doll, from Galle, was said to be used in a dancing ceremony to ease the pains of childbirth, details of which were not obtained. My interpreter on this occasion had only the ordinary man's knowledge of ceremonies, and, though interpreting in good faith, may have been misinformed, or have misunderstood.

of the black cow's milk, and is drank by the husband, while that upon the lower stone (the table, or mortar), similarly mixed, is drank by the wife. Upon the day of taking the medicine the husband and wife should, preferably, take no other food save, if necessary, a little milk. Before taking the medicine both should bathe and should dress themselves in clean clothing. Intercourse may take place at any convenient time thereafter, but conception is assured within three months of the taking of the medicine, and the birth of a child within one year. The medicine is effective only in the cases of people within the ages commonly suitable for the production of children, and is valueless for people who are beyond those ages.

Control of sex of child.—If a *female* child be desired the wife should, until conception takes place, sleep at her husband's *left* side. When intercourse is about to take place the husband should descend from his side of the bed, and, going round the *foot* of the bed, he should approach from his wife's *left* side. After intercourse he should descend upon the same side, and return to his place by the way he came. Furthermore, the wife should, until she conceives, bathe only on the *odd* days after her menses—the first day, the third, the fifth, etc. In addition, a yantra, in which there is a figure of a girl, may be kept over the bed.

If a *male* child be desired the wife should sleep at her husband's *right* side, and he should pass round the *head* of the bed to her *right* side, afterwards returning to his place by the same route. The wife should bathe, also, only on the *even*—the second, fourth, sixth, etc.—days after her menses.

Lack of milk in nursing.—If due to the action of an evil eye or of devils, and not to natural causes, a lime-tree twig having naturally seven leaves (none having been removed) is taken, and the leaves are picked off one by one, a mantra being recited before the plucking of each leaf. As each leaf is removed it is placed in a dish of water, into which, finally, the empty stem is put.

For the same purpose seven charmed limes may be cut, the cutting being accompanied by the recitation of mantras, over various parts of the patient's body, in the manner described for the curing of the "Effect of evil eye." One of the vertebræ of the large sea-fish *koppará* is worn, tied at the waist; or the flesh of the same fish is eaten.

See also "Use of garlic in magic," and "Protection of infants."

Pregnancy.—There are mantras for charming, preferably each day, the first food or drink taken in the morning during pregnancy, in order to protect the patient from the effects of the devils' actions; the charming is stopped when the child is born.

Parturition.—The water of a charmed coconut is drunk to relieve the pains of parturition. Unicorn's horn, ground into water and drunk, hastens delayed parturition. See also "Devil-Dancing," No. *x* in Set I. For protection after parturition see "Use of iron in magic."

Insanity, Possession, Epilepsy, Insensibility.—Insanity in its milder forms is cured by the application of mantras. For the cure of possession[1] see "Punishing Devils."

[1] In *Dem. Cey.*, the whole of Chap. VI is devoted to "Demon Possession," and several different methods of curing it are given.

According to a charmer, usually well-informed, who knew much concerning the magical treatment of diseases, epilepsy (as manifested by the usual symptoms of insensibility, foaming at the mouth, etc.) is due to natural causes, and is not produced by devils nor curable by charming. Compare "Amulets (Medicinal substances)."

To cure young people who, through the action of a devil, have become insensible, there is a charmed oil to be rubbed upon the forehead.

Charmers who become insensible during their operations are revived by the application of charmed water, or by the tying of charmed knots in their hair, as noted in various connections.

Insomnia.—There are mantras for the cure of insomnia. Compare "Thieves (Charms used by, etc.)."

Warts.—A number of small stones, equal in number to the warts, are placed in a package with a ½ cent copper coin (or three such coins). The warts are rubbed in succession with the package thus formed, which is afterwards taken, early in the morning, held in the right hand behind the back, without a word being spoken, to a cross-roads, where, the bearer of it having faced homewards, it is dropped, after which the bearer returns home immediately. Whoever picks up the package will, by his actions, assume the warts. (This is a good example of a *kema, i.e.*, a minor magical operation without the use of charming; another example is the application of iron-quenching water to cure "Effect of evil eye.")

Cramp, Pains in the limbs.—As a protection against and a cure for cramp in any part of the body one or more of the vertebræ of a shark (*mórá* = "any fish of the shark tribe") are worn, attached to a string round the waist. These bones, which are sometimes charmed to increase their efficacy, also prevent and cure all trouble in the vicinity of the waist. Bones of this kind whose authenticity is established are rather difficult to get and, considering the nature of the substance, rather expensive, one reason for this being that imitations, which are hard to detect, are often sold. The specimen shown on Plate XVI, Fig. 1, was thought to be one, and, although actually a mammal's bone, and incomplete, was worn, with good results, for a considerable time.

Metallic pieces called *wánsál* (?) (shown on Plate XV (A), Fig. 2), which are made of an alloy of lead with another metal, are worn by the Natives, of various races (Sinhalese, Tamils, Moormen, and others), in Ceylon to keep away and (if worn long enough) to cure swellings and pains in the joints, and pains in the arms and legs. A few (in the specimen shown, 18) are worn on the arm or at the waist. The virtue of these objects appears, from the information I received, to reside in their substance. They are sometimes to be found in the bazars, strung in quantity on long strings from which the vendor takes the number required by the purchaser.

To cure pains in the limbs the parts affected are washed with water charmed by an elaborate ceremony, or are rubbed with charmed oil. During the ceremony of charming one variety of such oil, the oil is stirred with a piece of iron.

To cure sprains rubbing with charmed oil is resorted to.

Stomach-ache.—Stomach-ache is cured by the application of mantras.

Head-ache.—Some dried ginger having been ground with woman's milk, and charmed before removal from the grinding stone, the mixture is rubbed upon the forehead. Instead of ginger, sandalwood may be used in the same manner.

Some coconut oil which has been charmed by the recital of a certain mantra over it seven times, it being stirred meanwhile with a piece of iron, is rubbed on the forehead.

Some *wadakahá* (*Acorus calamus*; sweet flag) is ground with *ghee.* The mixture is lighted, and then, having burned for a moment, is extinguished. The smoke arising, having been charmed by the recital of a certain mantra over it, is inhaled, the inhalation being facilitated by the use of a funnel, made of a conically-rolled jak-leaf with the end of the cone torn off, the point of which is inserted into the nostril. See also "Use of garlic in magic."

Ear-ache.—Some freshly drawn water in a new pot, or in the thoroughly clean palm of the hand, is charmed by the recital of a mantra, and a few drops are put into the afflicted ear. See also "Use of garlic in magic."

Tooth-ache.—Tooth-ache is caused by worms in the teeth.

A betel leaf, over which a certain mantra has been recited, is chewed with the aching tooth.

A little chunam (lime) is rubbed on the cheek, just outside of the aching tooth, and a certain mantra is recited.

A funnel is prepared by inserting a reed tube in a hole in a half shell of a coconut, and by means of this the smoke of charmed *dummala* powder thrown upon burning coals is drawn upon the aching tooth.

Difficulty in breathing, etc.—There is a yantra to be worn as a cure for this. A piece of unicorn's horn may be similarly employed.

There is a serious malady, curable by charming, in which the devils grip the patient's throat and thus prevent him from swallowing.

Nervousness.—This is cured by the tying on of a charmed thread.

Infectious diseases.—Against infectious diseases in general small amulet cases containing charmed oil or charmed pills are worn, usually at the waist or on the arm.

Against small-pox parts of tigers (or leopards) are worn. See "Amulets (Animal products)."

Fevers are cured by the use of mantras and yantras.

Dysentery (*atisára*) is cured by a ceremony in which a tree and a lamp are presented, on behalf of the patient, to the afflicting devil. See also "Amulets (Medicinal substances)."

PROTECTIVE MAGIC.

Protection from Perils.

From animals.—When passing through the jungle it is especially dangerous to come upon a deaf elephant in one's path, for, although ordinary elephants will usually go away when they hear people approaching, deaf elephants (who cannot hear them) do not. In order to cause a deaf elephant to depart the traveller should repeat a certain mantra, at the same time holding the index finger of his right hand within his ear.

There are various mantras to protect the traveller through the jungle, some general, some directed especially against certain animals, and intended to be recited when such animals, leopards, for example, are met. See also "Amulets (Animal products) (Medicinal substances)."

From snakebite.—There are certain yantras, engraved usually upon copper, which protect their bearers from the attacks of serpents. A picture of the King of the Cobras, a double-headed snake, tatued upon the arm, serves the same purpose. The jewel which is possessed by certain serpents [see "Amulets (Animal products)"] protects its bearer from snakebite. So also does peacock-oil, either carried or rubbed upon the body.

A certain charmed oil, dropped into a cut in the thigh, is a similar protection; this oil changes the colour of the skin, whatever its original tint, to yellow near the incision, if it takes effect.

There is a certain mantra which may be used in connection with any charm, or in the preparation of any amulet, against serpents.

A mantra which, repeated mentally seven times just before setting out on a journey, will protect the user from snakes, gives the name of a serpent who was "King of Serpents," and the names of each of his parents, and, after stating that he lived in "the Himalaya Mountains (some distant, but apparently indefinite region) and was the grandfather of 60 million serpents," says "should any serpent come near me to-day, let him press his head against the ground in reverence." After the recital of the mantra the person pretends to spit towards his feet.

If it be desired to cause a serpent or a centipede or the like to become inert and harmless, lying as if paralyzed, a handful of sand should be taken up and thrown upon the animal, a short mantra having been recited over the hand. Or, some saliva having been charmed in the mouth, by means of the same mantra, a pretence is made of spitting upon the animal. To cause the animal to be the more firmly bound, both forms of the charm may be used. Should it be desired to cause the animal to remain without moving about during some little time, the quantity of sand charmed should be greater, and it should be scattered about where the animal lies; until the effect of the charming departs from the sand, after about half an hour, the animal cannot move without touching some of the paralyzing sand about it.

In or upon water.—To keep from such dangers as drowning, attacks by fish,

crocodiles, or water-snakes while swimming, sea-sickness, the overturning or sinking of a boat, and the like, a person should, just before entering the water or the boat, splash some water with the hand in each of three directions (in order to protect himself on both his sides, and from dangers coming from directions between), saying, at the same time, "*Namo darpa darpa swáhá* (?)" (apparently a mere meaningless formula) for each direction. If the person embark upon a large vessel, so that he is unable to reach the water, he should replace the splashing of the water in this operation by the throwing of three pebbles, one in each direction.

The figure of a fish, formed of gold or silver and charmed, representing the great fish called "*Ánanda-kurmastekur* (?)" (apparently the combined names of a fabulous tortoise), whose powers are seven times as great as those of any other animal of the seas, will protect the wearer from all dangers in or upon the water.

Ornaments having a fish as the motive are not uncommon in Ceylon, but to most of these the Sinhalese seem usually to attach no protective significance.

A yantra bearing the form of a fish, and protective against the dangers of water, is noted under "Yantra."

Against lightning.—When the deities Aruchéna and Víma fought together, and Víma attacked his opponent with lightning, the former trampled the lightning beneath his feet. For this reason Aruchéna is appealed to by people for protection during thunderstorms. (For an application of this belief see "Yantra.") See also "Use of iron in magic."

In general.—A picture of Bhadrakáli (a very powerful benevolent devil), which has been charmed seven times, put up within a house, will cause that deity to extend her protection to those persons, living in the house, who offer respect to it by bowing the head before the picture whenever about to go out and by burning a little incense powder before it morning and evening. The picture is treated only in a respectful manner—prayers are not offered before it. See also various headings under "Amulets."

Protection of Infants.

For several days after birth an infant continues to smell of blood, wherefore it is particularly attractive to the devils and peculiarly liable to their attacks. It must, therefore, be protected with special care during this period.

After a newly-born infant has been washed there is stuck upon its forehead, just above the nose, a small pellet which is allowed to remain in place during three days (as to which there is generally no difficulty, the infant usually lying quiet at this time). The pellet is formed of the ashes of some medicine mixed with a little gold rubbed from an ornament, and protects the infant from the attacks of devils, the effects of evil eyes, and the like.

Immediately after an infant has been washed after birth there is tied, upon each of its wrists, a thread upon which are strung several sections of *wodakahá* (sweet flag; apparently sections of the root). These strings are worn until the child is about three months old, and protect it from the attacks of devils, from

infantile troubles, and from stoppages of its mother's milk caused by the effect of envy (this last is as stated by an informant; in the protection of the child some effect seems to be extended to the mother, but in what way was not made clear). The number of pieces used appears to be immaterial; in a pair of wristlets taken from an infant at Colombo (see Plate XVI, Fig. 2), it happens that there are five pieces on each thread, but it was said at the time when the specimens were obtained that any other number might have been used with equal propriety.

The placenta, having been wrapped in a piece of matting, and having had *yadina* (a kind of verse) recited over it, is buried, usually close beside the parent's house. Should the *yadina* be omitted, the child may become sickly, or ill, or stunted, as a result of injury to the placenta. It was said that the placenta is sometimes used in charming ceremonies (but how, or for what purpose my informant did not know), and that, to keep it from being disinterred, and the child, despite the *yadina*, from suffering, burial near the house is practised.

Until a child has been weaned it is unclean, and should not, therefore, wear golden ornaments before weaning takes place. See also "Children's amulets," "Use of garlic in magic," "Use of iron in magic," "Curative practices (Children's sicknesses)," and "Votive offerings."

Protection of Houses.

Before a house is built four pebbles and four silver coins should be charmed, and one of each should be buried at each corner of the site of the house. Instead of ordinary pebbles uncut precious stones, of poor quality, may be used with great advantage, since such stones attract the "sight" of gods and benevolent devils; such stones may be of different kinds, or all of the same kind. Near the site of the house a post should be set up, at the middle of which two coconuts are hung, and at the base is placed a new pot containing a coconut flower and some water taken from a running stream.

When the house is completed a charmer comes, bringing, amongst his other paraphernalia, a mask of Garayaka (the devil of new houses). During the night the charmer dances; when morning comes he crosses over each doorstep of the house, and throws some *dummala* powder in each of four directions in each room. At about 10 a.m. he dances with a new pot full of water, turning the pot about so that some of the water spills from it in each of the rooms, until he reaches again the place at which he entered, where he dashes the pot against the steps and breaks it. The future residents of the house may then come in to occupy it. The people of the house may, besides having a ceremony performed by a charmer, have preaching by a number of priests, during several nights; on the last day a feast is given to the priests, which marks the conclusion of the ceremonies.

To protect a house from white ants a new pot is filled with water from a "new well," and is charmed. Then, whilst a mantra is recited, some of the charmed water is thrown over the wood of the house, and the pot, with some of the

charmed water still in it, is hung up in the house. See also "Yantra," "Use of iron in magic," and "Votive offerings." For protection against thieves see "Thieves (Charms used by, etc.)."

Protection of Crops.[1]

In order to protect the crops in a field charmed water is thrown about it, on three days in succession, by means of an areca-flower.

A person covers his head and body with a white cloth, and, walking in the early morning along the paths around and through the field to be protected, without speaking a word, scatters, where they will not be trampled upon by people, the ashes of five kinds of *pas pengiri* woods. While the ashes remain, and are not trampled upon, the crops will not be attacked by noxious animals or insects.

A charmed image of a man made of sticks, straw, etc., is set up in the field.

A living land-tortoise is broken into pieces, which are then scattered about the field; the crops in the field are thus protected by land-tortoises from damage, which, in the case of some crops, may otherwise be serious.

To protect a coconut-plantation from attacks by rats, one of the trees is dedicated to Húniyan Dewatawa (a very great devil whose proximity at night may be known by the light which he gives off). Two nuts are taken from the tree to be dedicated, after which no more are taken during the period for which the tree is dedicated. From these two nuts oil is made, which is burned, during the dedicatory ceremony, each evening of seven days, upon a small altar built of young coconut-leaves against the tree to be dedicated, upon which there are also placed, as offerings, some flowers, including areca-flowers, some small coins, some bits of camphor, etc. During the ceremony *yadina* (a kind of verses) are recited.

Protection of Cattle.

Cattle, which are very largely used as draught animals, and are consequently exposed to many evil influences, are almost always protected by magical means. Their hides are branded with various protective designs (as shown on Plate XIV, Fig. 9, and noted under "'5' in . . . magic") for the prevention or cure of the ailments to which cattle are subject (those illustrated were said to have been executed as a cure for boils and thinness caused by the effect of an evil eye), and they wear various amulets, of which hair-ropes, chank-shells, and pieces of iron are the most usual.

The hair-ropes, occasionally brown, but generally black, are commonly said to be (and apparently actually are) of human hair (sometimes, it was said, with elephant's hair), and, although their virtues are intrinsic (for what particular reason I could not ascertain), are often charmed in order to add to their efficacy. They

[1] Much on the protection of rice-crops is to be found in "Customs and Superstitions Connected with the Cultivation of Rice in the Southern Province of Ceylon," by C. J. R. Le Mesurier, in *Jour. R. As. Soc.*, 1885, pp. 366 *et seq.*

are worn wound one or more times round the bullock's neck, or stretched across the top of his head, held by the horns, or round the leg just above the hoof.[1] Upon the hair-rope a chank-shell [see "Amulets (Animal products)"] is often threaded (Plate XIV, Fig. 11), upon a steel chain (such as is shown on Plate XIV, Fig. 10), in order to secure greater protection; these chank-shells are, it was said, unlike the hair-ropes, not charmed. A piece of hair-rope is shown in Fig. 19, Plate XVI.

A third common amulet is a piece of iron, generally in the form of a flat disc pierced with a circular hole, or of a square with a square hole (Plate XVI, Fig. 3, and Plate XIV, Fig. 10). Often several of these are worn together on a chain so that a jingling noise is produced when the animal walks. Curiously, the chains worn round the neck or round the horns are, I have invariably been told, for ornament alone, and, since they are of "steel (not iron)," have no protective virtues.

Sometimes pieces of ivory, or of bone representing ivory, are worn as a protection against the evil eye: see "Amulets (Animal products)" also Plate XVI, Fig. 4.

There are charmed medicines, usually worn in a small leather bag at the neck (Plate XVI, Fig. 5, shows a bag for the purpose, containing a powder), to ward off various diseases, and charmed oils, contained in metal cases, sometimes suspended by a charmed saffron-stained cord, with the same intention.

There are mantras, which must be recited over the cattle each year, to protect the members of a herd against attacks of epidemic diseases from which cattle not thus protected suffer.

For the recovery of a lost bullock there is a special ceremony addressed to Gopaḷuyaka (the devil who attacks cattle), of the same nature as that described under "Protection of crops," in which the produce of a tree is vowed to him during a certain period. See also "Employment of votive offerings."

AMULETS.

Miscellaneous Notes.—Some objects which, in other countries, are frequently used as protective amulets, but concerning the employment of which in this manner in Ceylon no information could be obtained, include bells, horns (used as a whole, as materials, or, in representations, as symbols), coins, and naturally-perforated stones. These last do not, apparently occur at all in the vicinity of Colombo, for various persons there who were questioned concerning them had never heard of such things.

When medicines, particularly charmed medicines, are being prepared, the devils who cause disease sometimes attempt to upset the pot, or do other damage. In order to protect the medicines from them a bit of iron, such as a nail, should be tied upon the pot, and an × (not a Christian Cross [+], my informant stated) marked with chunam (lime) upon the pot's side.

[1] These ropes are much used as amulets in Southern India, and also for the bullocks driven by natives of Southern India in Ceylon, the Straits Settlements, and elsewhere.

Various amulets and amuletic substances have been noted under "Protection" (various headings), "Use of iron in magic," "Astrology," and "Charms to Secure Favour."

Children's amulets.—Black glass bangles (Plate XVI, Fig. 6) are commonly worn, several together, by young children. They are called *kaḍa-walalla* (equivalent to "breaking-bangles"), and are placed upon the child when it is weaned, being worn until the child is seven years old. These bangles, which are imported from India, are very much used by the Sinhalese, and considerably, apparently, by the other races in Ceylon. It is believed that, should one of the bangles be *accidentally* broken while worn, the child will be cleared of any effects of an envious eye or the like to which it has been exposed, and that it will be protected from evils of the kind in the future. If, however, some effect of the sort has come upon the child before the bangles are put on, this, most probably, will not be cleared away by the accidental breaking of one of them thereafter. It was said that glass bangles of other colours, which are used to a much smaller extent than the black ones, are considered similarly protective; and also that like virtues are ascribed to bangles of chank-shell. (It should be noted that the bangles are not supposed to break by exposure to an evil influence which would otherwise affect the wearer, as is often the case with amulets, but act protectively in the manner described above. A belief similar in nature is mentioned under "Divination (by omens)." It is probable that the black bangles are preferred because black is, in some aspects, a protective colour, and, similarly, those of chank-shell because that material is in itself protective.)



CHILDREN'S AMULETS.

Sinhalese children wear, as a protection, a piece of metal shaped as in the left-hand figure above (and said to resemble, or to represent a heart), which has been charmed. This ornament, which is called *hṛida-wastuwa* ("heart treasure") is usually made of silver, although any metal (excepting brass, which is a "low caste," *i.e.*, base, metal) may be used, an alloy containing the five metals being especially suitable.

A protection against sicknesses of the chest, colds, etc., called by the same name and made of the same metals as the amulets just described, is a conical ornament, of the form shown at the right, which has been charmed.

Infants wear sometimes, it was said, small shells, at the neck, for the cure of a disease in which living beetles, which fly away, are given off in the excrement, and which affects the skin strongly. It is immaterial, it was said, what species of small shells are thus used; amongst some shown as suitable were a number of cowries.

For the cure of a child's cough a string of *magul-karanda* (*Pongamia glabra, Vent.* Leguminosae) seeds is worn at the neck. The seeds, which are believed to act by means of their intrinsic virtues, and are not charmed, are worn by the children of all races (including Sinhalese, Tamils, Moormen and Burghers) in Ceylon. One way of applying the cure is to hang seven of the seeds at the patient's neck, and to remove one each of the following days in succession until, with the removal of the last seed, the cough disappears. It seems, however, that this method is not always applied, and that the seeds are sometimes worn like ordinary amulets. Attached to the necklace of these seeds shown on Plate XVI, Fig. 7 (which was worn by a Tamil child), there is a small copper disc engraved with a device said to represent Siva's Bull and to secure Siva's favour and protection.

Bangles or anklets of iron, usually thin and light, or bracelets of iron chain, are often worn by children as protections against devils. As is the case with the amulets for cattle (see "Protection of cattle") these objects should be of *iron*, not of *steel*. (Plate XV (A), Fig. 5.)

Tamil girl-children in Ceylon often wear a protective "fig leaf" attached to a string round the waist, and young Tamil boys, less often, an elongated conical object corresponding to the "fig leaf." These objects are usually made of a soft white alloy or of silver, and are frequently accompanied by a number of other objects, some resembling bells, of conventional and archaic form (see Plate XV (A), Fig. 6, a silver "fig leaf"; Fig. 7, a silver "fig leaf" ornamented with a sun and a moon, to secure the protective influence of the luminaries; Fig. 8, a girl's waist-string of pewter objects; Fig. 9, a boy's waist-string of pewter objects). The girl's ornament is often, with young children, the only clothing worn; its amuletic intention (although frequently denied by the parents) is shown by its being worn sometimes beneath the clothing, even when the child is fully dressed. A form of it commonly sold in the bazars consists of a piece of coloured glass having the outline of a leaf, bound in and crossed longitudinally by a pewter frame. Although this ornament is commonly explained as representing a leaf of "The Sacred Bo-tree" (curiously, since the Tamils are not Buddhists), that explanation appears to be based on a merely fortuitous resemblance, and to be intended as a means of evading the giving of the real meaning, because, according to several informants, the amulet is really a representation of the *vulva*. The boys' ornament, which evidently is a conventionalized phallic form, is sometimes similarly explained as a toy for the child to play with, in order that he may not injure himself. The principles actually underlying the employment of these ornaments (unknown, no doubt, to many who make use of them), as explained to me, are that the devils are wont to "keep sight" on the generative organs, if these be exposed to view, thereby causing, possibly, serious injury to the child, and that therefore metal images of the organs, which cannot be thus injured, are hung near the organs themselves, to take the devils' "sight."

The children of Mohammedans sometimes wear these ornaments; those of Sinhalese Buddhists do not commonly, if at all.

See, for various notes, "Protection of infants," "*Pañcháyuda*," "Colours in . . . magic," and "Use of garlic in magic."

Charmed objects.—Charmed objects should not be worn when a funeral is attended, nor when sleeping near a woman in her menses, nor when having intercourse with any woman, lest they lose their efficacy. When the virtues of charmed objects have thus been lost they cannot, in general, be renewed, and, if the protections are to be replaced new objects must be taken for charming.

In some amulets the virtues are due entirely to the ceremonies to which the amulets have been subjected; in others they are inherent in the materials of which the amulets are composed, or in the amulets' forms, but may be intensified by charming ceremonies.

Pañcháyuda.—The *pañcháyuda*, "5 instruments" (Plate XV (A), Figs. 10 to 14 inclusive), is an amulet commonly worn by children, and occasionally, it was said, by adults. It is a metal piece, generally circular or elliptical, engraved with, or bearing in relief, five symbols, and it has been charmed. Sometimes, I have been told, the symbols which usually represent the five instruments are replaced by five simple dots. The amulet is generally of gold, more or less pure, or of silver, plain or gilded, as it is thought by some Sinhalese that the greater the intrinsic value the greater the efficacy is likely to be, although by others an alloy of the five metals (see "Metallic amulets") is considered to be the most suitable for the purpose. Sometimes iron is used in the construction (as in the one shown on Plate XV (A), Fig. 10), but only in a minor capacity (the explanation which was given of this was that iron is too common a metal and consequently displeasing to the deities invoked, as well as being too ugly for wear as an ornament; I am inclined to think, however, that the idea of iron as a protective metal probably conflicts with some of the ideas underlying the *pañcháyuda*). Occasionally the metal is enriched with precious stones; sometimes it is set with a single stone (as in Fig. 12, Plate XV (A), where, as also in a gold *pañcháyuda* noted, the gem is a pearl). The *pañcháyuda* is placed upon children, it was said, when they are weaned, a propitious day being chosen by an astrologer for the purpose; it was also said by the same informant, that the effect of the charming to which the *pañcháyuda* is subjected lasts seven years, at the expiration of which period it should, if the amulet is to continue in use, be repeated. The charming of the amulet is reputed to be a long and elaborate process, and months may elapse before a *pañcháyuda* which has been ordered is ready for wear. In consequence of this it is almost impossible to buy a *pañcháyuda* from the parents of a child who is wearing it, and worn specimens can usually only be obtained either from the parents or in the bazars after the children who have used them have grown up or died. The wearing of a *pañcháyuda* is sometimes concealed, as often the stricter Buddhist priests set themselves against it.

The information received concerning the five objects shown upon the *pañcháyuda* was of conflicting kinds. The symbols, which vary somewhat, seem

to represent, commonly, five of the following: a sword or knife, the *Para-walalla* ("Best-ring," usually shown as a ring with a plain or indented edge, a magical object whose properties are such that if it be thrown into the sea the sea will dry up, or if against the sky there will be no rain during seven years, or if into the earth precious stones and treasures hidden there will be discovered, etc.[1]), a chank-shell or possibly a musical instrument made of a chank-shell, a short spear, a trident, an elephant goad, a bow and arrow, and an axe. The five objects were said, by one informant, to be the emblems of five of the nine planetary deities, whose protection is thus sought: they are to be seen in pictures of those deities, and although they are emblems of other gods or demi-gods as well, I am inclined to his opinion. According to another informant, a man generally well versed in such matters, the symbols represent the weapons of various deities, ranging from Vishnu to the king of the devils, and all are objects feared by devils; by this informant it was said that five symbols were chosen in order to protect the five, figurative, not physical, "gates" of the body from the entrance of all evils. According to the labels upon the *pañcháyudas* exhibited at the Colombo Museum the symbols are those of "the five weapons of Vishnu." Most people questioned on the subject, even though they employed the *pañcháyuda* for their own children, seemed to know little concerning it, except that it should be powerfully charmed.

The *pañcháyuda* which is shown in Fig. 14, Plate XV (A), is of silver, and is sold new, at several shops in the bazar at Colombo; it is made also in circular form, and also of gilded silver. I am inclined to think that it is sold principally as an amuletic ornament to be used, without being charmed, by others than Sinhalese (and possibly by Sinhalese as well), and that it marks a step in the degradation of the *pañcháyuda* to a decorative ornament of which the amuletic origin has been forgotten.

Metallic amulets.—An amulet composed of "five metals" is shown on Plate XV (A), Fig. 15. Although it resembles in various ways an "electric medal" of European manufacture, it has been, according to several Sinhalese to whom it was shown, made in Ceylon, and is of a usual, though not very common type (it is, I think, the only specimen of the kind I have seen). The enclosing band is of a light yellow alloy, said, by one or two informants, to contain five metals within itself; the circular pieces (apparently sections of rods) of copper, zinc, or, possibly, some leaden alloy, and a darker yellow alloy; and the small suspending ring of silver. Even if not, as claimed, of Sinhalese manufacture, the specimen is interesting as showing an adaptation, or, possibly, a re-arrangement and modification, of a European protection to fit Sinhalese beliefs.

Another amulet composed of "five metals" (said to be gold, silver, copper, "bell metal," probably a grey bronze, and, apparently, a kind of yellow bronze), in this case mixed together, formed as a trident, a "three-pointed war instrument," is shown on Plate XV (A), Fig. 16. This object, which has been powerfully charmed,

[1] Upham, p. 118, calls the *Para-walalla* the warlike weapon of a deity.

is to be worn in the knot of hair at the back of the head or in the hat, for the purpose of causing its bearer to be invariably victorious in war, gambling, games or sports, and the like. See also "Use of iron in magic," and "Curative practices (cramp, etc.)."

Animal products.—The elephant, as in other Asiatic countries, on account of its nature as well as because of the Buddhist conceptions associated with it, supplies several sorts of amulets. Its ivory is considered to be protective against the effect of the jealous or envious eye, bad dreams, and the like, a virtue extended sometimes to bone (whether from some other animal or from an elephant, I did not learn), which, possibly through ignorance, is taken as ivory. A finger-ring of bone (Plate XVI, Fig. 8) and a perforated disc (Plate XVI, Fig. 4) of the same material suspended from a bullock's neck, both considered to be ivory and therefore protective, illustrate these beliefs. There is, in the Colombo Museum, a section of an elephant's jaw, mounted in silver, to be carried as an amulet; the same material, I have been told, ground in water which is used to rub upon the affected parts, will cure a certain disease, lasting about a week, one of the symptoms of which is a swelling about the jaw. The tail-hairs of elephants are mounted in gold, sometimes beautifully worked, as finger-rings, and thus worn are said to protect their bearers from the "sight" of devils, from bad dreams, from sicknesses in which the patient starts with fright (nervous diseases?), etc., and from the bites of dogs, cats, rats, foxes, wolves, and other animals; in order to secure the maximum effect the ring should be charmed. I have not seen in Ceylon the rings, formed entirely of elephant's hairs plaited together, which are used on the mainland. A bracelet (Plate XVI, Fig. 9) of plaited black hair, mounted with silver and bearing a small case containing charmed oil, was said by its wearer (a Tamil man) to be of elephant's hair, and consequently protective, although it is really of the hair of some smaller animal (horse?); here the black colour, whatever be the nature of the hair, is a protective factor. The hair-ropes worn by bullocks (see "Protection of cattle") were said to contain, sometimes, elephants' hair; this statement, which is a doubtful one, I was never able to verify.

The tiger also, as on the mainland, furnishes a number of protective substances. However, no distinction seems to be made between the tiger and the leopard where protective virtues are concerned, and, since I have repeatedly had pointed out to me, by various informants, leopard-claws, pieces of or even entire leopard-skins, etc., as those of tigers, I believe that when tigers are mentioned by the Sinhalese leopards are generally meant. I shall, therefore, speak of the products of both leopards and tigers herein as if they were those of tigers only.

There are two sets of beliefs in which the tiger appears as a protector—in one his virtues are due to his physical powers, in the other they are due to his assumption as an apparitional form by a devil. According to the former a tiger's tooth, or his claw, or one of his whiskers, or a piece of his skin, especially if charmed, will protect the wearer from attacks by wild beasts (wild buffaloes, especially) of any

kind, or by a mad dog. The dog, being a favourite prey of the tiger,[1] has a great dread of anything connected with his enemy. Should one wish to test the genuineness of a tooth for sale, as a tiger's, in the bazar (pigs' teeth are sometimes sold in substitution for tigers', wherefore, I was told, it is safer to buy a tiger's tooth from a Mohammedan merchant than from a Sinhalese or Tamil), it is only necessary to conceal it amongst some food and to offer the food to a dog; should the tooth be genuine the animal will not dare to touch the food. By virtue of this same property parts of the tiger protect their wearers from evil dreams, for the devil who causes such dreams comes at night riding upon a black dog which, fearing the tiger whose presence he scents, will not approach the sleeper. Some charmed tiger's-fat which was secured for me was said to have, if rubbed upon the body, or carried, in addition to the virtues enumerated above, the power of keeping away devils (especially the one causing small-pox), and, rubbed upon the forehead and the hand, that of giving victory in a fight. The Sinhalese do not appear to believe in the teeth, claws, etc., as protections against evil eyes and like influences.

According to the second set of beliefs the devil who causes small-pox sometimes appears, to persons in the extremities of that disease, as a tiger. In consequence of this various parts of real tigers are a common protection against small-pox, a little charmed tiger's oil carried in a case being a particular favourite. (The spotted appearance of the leopard suggests that it is that animal, rather than the striped tiger, which is connected in popular belief with small-pox.) On Plate XVI are shown a number of products of the tiger; Fig. 10, a tooth mounted as a pendant, with a silver band near the point to prevent splitting; Fig. 11, a tooth (said to be a tiger's, but probably only an imitation) mounted as a brooch in the form of a fish (see "Protection . . . . upon water"), as quite commonly sold in jewellers' shops of the better class; Fig. 12, an armlet of tiger's skin mounted with silver (another obtained, made of bits of skin sewn into an endless band, is not shown); Fig. 13, a silver case containing charmed tiger's-oil and worn at the wrist. The claws, mounted as pendants, are very commonly worn, although not always as protections.

Charmed lion's-oil is worn in an amulet case, or dropped into a cut in the flesh, by warriors, for protection (and evidently, though it was not so stated, to give courage).

To chank-shell, probably originally chosen because of its adaptability to the making of ornaments, various protective virtues are assigned by the Sinhalese, largely associated with its connection with religion. By people, finger-rings (Plate XVI, Figs. 14, 15, 16) of chank-shell are worn as protections from evil and misfortune, and, very commonly, as curative of pimples, particularly those upon the face. When used for the latter the patient occasionally passes his hand over his face, to increase the effect; powdered chank-shell, also, rubbed upon pimples, is

[1] The Malays, amongst other races, seem to hold the same idea; one of the charms for victory, given in *Malay Magic*, p. 522, contains the line

"Ha, I am a Tiger and thou art a Dog."

supposed to have a very beneficial effect. Some of the finger-rings are plain; others have a carved decoration, which, it was said, is merely decorative, not symbolic. Bangles of chank-shell are worn by children (see "Children's amulets"). Rings of white glass (Plate XVI, Fig. 17) are sometimes worn as a protection, because of their resemblance to chank-shell, and, I was told by one informant, coloured glass rings may be worn with the idea that they are coloured chank-shell. Entire chank-shells (Plate XVI, Fig. 18) are very commonly worn by draught-cattle, hung below or at the side of the neck, or upon the head between the horns (Plate XIV, Figs. 9 and 11), being held usually by the amuletic hair-ropes (see "Protection of cattle") or the steel chains. The shells thus used are sometimes plain, sometimes incised with a design, and are sold, in the shops dealing in teamsters' supplies, with a hole for the suspending cord to pass through knocked or bored in them. Instead of an entire shell a number of rings of chank-shell (Plate XVI, Fig. 19), strung generally upon a hair-rope, are sometimes used. The chank-shell is said to protect the animal from the evil attentions of Gopaḷuyaka, the devil who causes sickness in cattle.

Peacock feathers, formed into two bunches which are set together in the shape of a V, are placed upon the wall of a house, directly opposite to the entrance doorway, as a protection against many diseases and as a means of securing good-luck. The oil of peacocks, charmed, is good as a general protection, and serves particularly against snakebite.

A piece of unicorn's horn, mounted for wear, is sometimes carried as a cure for "heavy breathing" (asthma ?) and as a protection. An amulet consisting of a piece of some substance, apparently horn, mounted in silver (Plate XVI, Fig. 20) was not recognized by Sinhalese to whom it was shown, but they suggested that it was an imported medicinal amulet.

A deer's musk-sac, in which the musk has been replaced by a mixture of medicines (including a little musk), charmed, forms an exceptionally powerful amulet. It is a valuable protection against all kinds of misfortunes and perils; it brings luck in gaming and in war; it brings a man who is delirious or insensible, etc., to his senses, if placed in his hand. The specimen shown on Plate XVI, Fig. 21, is an amulet of this kind; there is, however, a possibility here that, instead of a genuine musk-sac (which is comparatively expensive) having been used, an imitation has been substituted.

See "Children's amulets" for small shells worn by infants; "Curative Practices (Lack of milk) (Cramp)" for bones of fishes; and "Charms to Secure Favour" for charmed egg-shells.

The following animal products, used as amulets, must be taken as being more or less mythical in origin.

Some serpents, of a very poisonous kind, contain luminous stones which they vomit up at night to give them light. Since it is impossible for them to live without these jewels, their possessors never go far away from them. The serpents which have these stones are not specially marked, but are recognizable only through

being seen with their stones. A stone is obtained, by anyone fortunate enough to discover its possessor, in the following way:—During the day the hunter erects, at a spot to which the serpent is known to come at night, a clean, polished, and thoroughly oiled palm trunk, with a platform or a crosspiece at the top. When evening comes he mounts this, taking with him a large package of cow-dung, and awaits the arrival of the serpent. When the serpent has set down his jewel, and gone a little way from it, the hunter drops the dung so that the jewel is covered by it. The serpent returns at once to seek its treasure, and, not finding it, attempts to climb the oiled pole in order to reach its enemy, until it dies at last of rage and the effect of the loss of the jewel. The stone thus obtained confers, after having been charmed, enormous and extraordinary powers upon its possessor; it is also an exceptionally valuable amulet against serpents.

A luminous stone is also borne by certain lizards, which may be recognized by their possession of two tails. It is impossible to obtain this stone by killing the lizard, for if it be within the animal, it melts away the instant that death occurs. In order to obtain the jewel the lizard possessing it is placed in a covered pot having a small hole in the bottom, beneath which is a second pot. The animal, finding itself in darkness, brings forth its stone, which at once rolls down the inside of the pot and through the hole; soon after this happens the lizard dies. The stone, like that of the snakes, confers, after having been charmed, enormous and extraordinary powers upon its possessor.[1]

The leader or chief of each band of jackals (the animal described to me, and named in English, was a fox, but the Sinhalese names given for it, *nariya* and *kenihila*, mean either jackal or fox; I am inclined to the former animal, partly because of the colour of the horn, partly because of the S. Indian belief noted below) bears upon his forehead a small horn (about ½ inch long, covered with greyish white skin, and with a fringe of hair round the middle). This horn is sometimes lost by the animal, which, rubbing its head in a heap of paddy left lying about, breaks the horn off. The horn reveals its presence by preventing the boiling of the water into which the paddy is put during the process of cleaning, and is then searched for and discovered. The authenticity of a horn of this kind may be proved by placing it amongst some rice-grains which are offered to fowls, for, if the horn be genuine, the fowls, fearing an enemy, will not come near the food. A horn of this kind, after being charmed, is worn in a case upon the arm, and serves as a powerful protection against all evils, and as a means of securing good-fortune of every kind, in gambling, in racing, in the seeking of favours, etc.[2]

Vegetable Products.—It is believed that the king of the devils, Wesamuṇu,

[1] In Clough's *Dict.*, p. 238, a stone of somewhat similar nature is described, under *Daḷamutu*, as a fabulous pearl said to grow in the snout of the hog.

[2] Much information concerning the manufacture, sale, and purpose of jackals' horns, in Southern India, is to be found in Thurston's *Eth. N. in S. India*, pp. 266, 270. See also Tennent's *Ceylon*, 4th ed., vol. i, p. 145.

sometimes uses a rod of rattan for punishing his refractory subjects, and that, in consequence, devils have a great dread of that material. A proof of their dread is that rattan is especially efficacious in curing madness (possession) by whipping, the mere sight of it sometimes quieting the patient. People sometimes carry, while out, a small cane (but not a mere fragment) of rattan, to protect themselves from devils.

See also " Use of garlic in magic " ; and " Children's amulets."

Medicinal Substances.—There is a very powerful charmed oil called *Chandra-kánti* (" Moonbeam "), which, if carried (on cotton wool, in an amulet case) or rubbed on the top of the head after the bath, protects its bearer from contracting contagious diseases, even though he go amongst people suffering from such diseases, and from wounds. If a little be put into the nose and ears of a person who is insensible, or in an epileptic fit, and another person blow upon him, the patient will at once recover. The oil is made by mixing together five kinds of oil, cow's milk, the juices of certain leaves, barks, roots, and the like, and is then subjected to a religious charming by being kept (amongst the various other things which are to take up some of the effects of the blessings) in the " shed " during the Buddhist preaching ceremonies, performed by a large number of priests officiating together, for the relief of a village suffering from, or threatened by, disease or misfortune. When these ceremonies have been concluded the oil is taken to an empty room (preferably in a vacant house) where there are no women about, and is charmed by three men who, taking turns at the work, recite mantras continuously during a period of seven days and nights, so that the sound of the charming does not stop, even for an instant. The oil, whose treatment is then complete, should be kept as much as possible from impurity (see " Impurity "). The oil, ready for use, may be obtained from native drug vendors at Colombo.

There are charmed pills called *Sanni-sinha-guliye* (devils' lion [or pre-eminent] pills ; that is, it was said, " pills which, like a lion, frighten the devils "), formed of a mixture of various medicinal substances, one of which, worn in an amulet case, or tied in a piece of cloth, upon the right arm, will protect the wearer from all illnesses, against the attacks of all kinds of devils, from any of the effects of an evil eye or envy, and from wounds. For the charming of these pills they are placed in a vessel, round which a thread is passed three times, and exposed to the effect of Buddhist sutras, continuously read by two or more men, without allowing the sound to stop for an instant, during seven days and nights. They are then completed by a charming ceremony, conducted in an empty room, similar to that used for the oil described above. Like the oil, they should be preserved from the effect of impurity. They may be obtained from native drug-vendors at Colombo.

A charmed mixture, called *Añjanema(?)*, of a considerable number of medicinal substances will, if carried in an amulet case worn on the arm or at the neck, protect its bearer from evils and injuries of every kind, from devils, from all diseases, from snakebite, from dogbite, from attacks of bulls, etc. It is supplied

wrapped up in a betel-leaf (an honourable material), in which, in order to preserve its efficacy, it should be kept.

There is a charmed mixture of several medicinal substances which is worn to secure the protection of the four guardian gods. During the seven days required for its grinding its maker should eat only vegetables, and he should grind the mixture only at noon each day. During the grinding he, together with the grinding stones (which should be new), should be covered with a white cloth, and his mouth should be screened by a white cloth in order that his breath may not defile the mixture (and, probably, partly for his own protection against the cobra-poison which is one of the ingredients). When the grinding is finished the mixture is charmed for seven days, before being removed from the stones.

A certain charmed oil which is used to enforce chastity, especially by jealous husbands about to leave for a journey, and sometimes to cause annoyance to people whom the user of it dislikes, has the effect of preventing its bearer from separating from his (or her) partner after intercourse. The oil is generally rubbed upon its bearer's person or clothing, and has then an effect lasting about one week; should it, however, be rubbed upon the subject's mattress, a longer efficacy, up to about two years, may be obtained. A mantra is recited over the finger with which the rubbing is to be done, and another during the process of rubbing.

Finger rings.—A metal finger ring ornamented with a small image of the *Para-walalla* (a magical ring; see "Amulets, *Pañcháyuda*") is a valuable protection.

A metal finger ring ornamented with a certain heart-shaped piece (similar in form to that shown under "Children's amulets") is worn as a protection.

A finger ring, preferably of gold, set with a ruby surrounded by pearls (at least three pearls ought to be used, although two are sometimes considered enough), if properly charmed will protect the wearer's entire family.

A finger-ring of black glass is, because of its colour, considered protective (Plate XVI, Fig. 31).

See "Astrology" for planetary (including *Nawaratna*) rings; and "Amulets (Animal products)" for finger rings of bone, or set with or formed of elephant's hair or chank shell, and for coloured glass rings.

Inserted amulets.—A charmed pellet of gold, inserted beneath the skin, will protect the bearer from dangers of every description. (In one man I knew, the gold, about the size of a small birdshot, had been put beneath the skin of the neck, toward the right side.) The pellet having been made, it is charmed, upon a "decorated chair," on three Sundays (note the conjunction with *gold*) in succession, after which it is placed in charmed oil. The skin is cut with a golden instrument (made by thinning and sharpening a piece of gold; an *iron* instrument must by no chance be used) which has been charmed, and, the wound having been cleansed with some charmed woman's milk, the pellet is inserted. When this has been done the wound is salved with charmed *ghee*, and is finally bandaged with a white cloth wet with water coloured with saffron. After seven days the cloth is removed, when the wound will be found to have healed completely.

See "Yantras" for charms to be tatued upon the body; and "Protection (Snakebite)" and "Amulets (Animal products)" for oils to be injected into the flesh.

Yantras.—Yantras are written charms, often astrological in character, which are used for protection, for curing, or for causing injury. Those for protection are carried upon the person, or kept, sometimes framed and hung like decorative pictures, in the house; those for curing are carried upon the person, usually tied to or strung upon a cord round the waist; those for causing injury are the material objects by means of which the evil influences called forth are brought, through actual contact, through "stepping over," or otherwise, into touch with the victim.

Yantras are usually engraved upon sheets of metal or upon ola-leaves, although they are occasionally written upon paper. Paper is, however, considered to be very unsuitable for the purpose, since if it becomes torn or otherwise injured, as may easily happen, the efficacy of the yantra may be changed or cancelled by the complete destruction or the changing of the form of some of its component characters (as R may be changed to P, or L to I, for example, in English). Preferably metal is used, gold, silver, copper, or some hard or soft white alloy, the more expensive the better (because the deities or benevolent devils whose assistance is desired are pleased with good things). Copper, often gilded, is probably the most usual metallic base. Poor people, who are unable to afford the expense of engraved metal, use ola-leaves, especially if the yantras (like most of those for curing) are for merely temporary employment, after which their efficacy ceases. It is usually such yantras as these, the need for whose application has ceased to exist, and not protective yantras, which are obtainable as specimens. Protective yantras are sometimes tatued upon the body.

The contents of yantras vary greatly; some contain merely inscriptions, to which, in others, magical symbols, such as the pentacle or the double triangle, are added, while others have elaborate, and sometimes beautifully executed pictorial designs. Many of the yantras are based upon some "magic square." Drawings of yantras for various purposes, written upon ola-leaves, each with an inscription indicating its intention, are kept in books by the charmers, and copies of them are made as required. Usually, if not always, a yantra is charmed before it is used, and in many cases the charms (mantras) proper to them accompany the drawings which are to be copied. There may sometimes be found upon yantras, when they have not been too long in use, traces of the charming to which they have been subjected, as the saffron staining of the binding cord, or a little incense powder. Being charmed objects yantras should, as much as possible, be protected from contact with (ceremonial) uncleanness; they will not be effective, for example, if placed upon a woman during her menses or the seven days following them.

Yantras are usually for the purpose of correcting unpropitious or harmful planetary influences causing misfortune or sickness. When such is the case the horoscope (see "Astrology, Horoscopes") of the person afflicted is consulted, and by the aid of the data thence obtained selection of the proper yantra is made.

Yantras usually protect from the malign influences of one, or of several of the planets in conjunction, but there are some which will protect their bearers from malign influences emanating from any of the planets. What was said to be an astrologer's copy (on an ola-leaf) of such a yantra, a variety difficult to devise and, it was said, rather rare, came into my possession in Ceylon; I obtained there also a yantra of similar character, inscribed on copper, said to secure for its bearer the protection of all the nine planets.

When they are to be carried, the sheets upon which the yantras are inscribed are usually rolled up and wrapped round with cord, after which they are often placed in amulet cases of metal. The amulet cases used vary in quality to suit the fancies and purses of the wearers. They are of the type common in the Nearer and Middle East, consisting each of an inner cylinder of common metal, closed at one end, into which the yantra is slipped, over which slides a closely-fitting outer cylinder, closed at the opposite end, of such material and workmanship as may be desired. Silver, some hard white alloy (such as German-silver), copper, and brass are the materials most commonly used for the outer cylinders. Some forms of such amulet cases are shown on Plate XVI, Figs. 22, 23, 24, 25. Yantras upon metal (Plate XVI, Fig. 26) seem to be less often carried without cases than those upon ola-leaves, due perhaps to the greater difficulty of keeping them from contamination, and, possibly, to some discomfort caused by the sharp edges.

Yantras upon ola-leaves are very frequently carried without a metal case. They are brought into small compass, and are then bound with cord (as shown in the specimens on Plate XVI, Figs. 27, 28, 29, 30, illustrating some of the numerous methods of cording). A few turns, usually two or three, are taken round the packet, and the cord is then twisted amongst and across these before passing to form the next set of turns. Sometimes the cording is very carefully done, and presents a quite artistic appearance. I do not know whether the various patterns used differ in significance; I think that they are merely matters of fashion or taste—for example, the two packets shown in Figs. 27 and 28 are old, I was told, because the particular style of wrapping and cording they exhibit has not, since a considerable number of years, been used in the Colombo district, whence they came. Frequently the ola-leaf has no covering except the cording; sometimes a piece of cloth is put on. In one of my specimens the sole covering is a thin sheet of gilded copper.

Should the wearer of a protective yantra be exposed to envy, jealousy, or the like, in such a manner that, but for his yantra, he would be injured, his yantra may burst its covering.

When, as sometimes happens, a large sheet is required for the inscription of a yantra, several broad ola-leaves are sewn together along their edges in the direction of their length, and the yantra is inscribed upon these as if upon a single sheet.

In addition to yantras for the purposes specifically mentioned above, there are yantras for the protection of children, for the cure of a crying child, for the cure of many different maladies and the effects of sorcery, for the protection of a

house and its inmates from all manner of evils, and for many other purposes. There are yantras which, written out and carried, or tatued upon the breast or arms, protect their bearers from wounds and injuries of all kinds; a yantra, with the figure of the King of the Cobras, protects against the bites of serpents; and another, including the figure of a fish, used in like manner, protects from dangers of every kind in or upon the water.

A yantra called *Ratana* (?) yantra (jewel (?) yantra), which may be carried on the person as a protection against lightning, is sometimes kept in a house, within a sort of little cubicle formed of white cloth, which preserves it from dust and dirt, before which a little incense is burned each evening. By the attentions thus paid certain of the deities are pleased and thereby caused to extend their protection, against all evils, to the house, and especially Aruchéna (see "Protection, Lightning"), who preserves it from danger by lightning.

There are other yantras which, kept in a house, will bring the good-will and favour of other people, and much business, to their possessors. See "Thieves (charms used by, etc.)" for yantras to protect against theft.

Amongst the yantras I obtained was one, inscribed upon a thin sheet of soft white metal, partially covered with wax produced by a certain kind of small black bee, and enclosed in a white metal amulet case. It was said to be a remedy for any one of seven kinds of eruptive epidemic diseases (small-pox, chicken-pox, and the like), and, when used, had to be tied upon the patient's bed. It (together with its wax) had been charmed during a period of nineteen days in a place to which there came no sound of ordinary human life. Together with a number of others it was prepared in anticipation by a charmer, upon the approach to his village of an epidemic of the kind mentioned, and was sold to the villagers when the sickness attacked them.

Description of Plates.

Plate XI. Objects from a Devil-Dancer's Outfit [Set I].

Plate XII. Objects from Devil Dancers' Outfits.
Figs. 1, 2, 3.—Masks, Set II, Nos. *k*, *o*, *n*.
Fig. 4.—False Mouth, Set II, No. *q*.
Fig. 5.—Paper Crown, Set III, No. *d*.
Fig. 6.—Red jacket, Set III, No. *a*.
Fig. 7.—Wooden Doll for use in Conception Ceremony.
Fig. 8.—Torch used in dancing.

Plate XIII. Representations of Devils.

Plate XIV.
Figs. 1, 2, 3.—Representations of devils.
Fig. 4.—Altar outside patient's house.
Fig. 5.—Drum-beater for devil-dancing.
Fig. 6.—Devil's blue dress with Nâga mask.

Fig. 7.—Devil's red dress with Garuda and snake mask.
Fig. 8.—Dancer dressed for a conception ceremony.
Fig. 9.—Bullock with protective branding.
Fig. 10.—Bullock wearing iron amulet at neck.
Fig. 11.—Bullock wearing chank shell and hair-rope on horns.

PLATE XV. A. Amulets.

Fig. 1.—Charmed thread.
Fig. 2.—Armlet for cramp.
Fig. 5.—Iron child's anklet.
Figs. 6, 7.—Silver Tamil "fig-leaves."
Fig. 8.—Pewter Tamil girl's waist-string.
Fig. 9.—Pewter Tamil boy's waist-string.
Figs. 10, 11, 12, 13, 14.—*Pañcháyuda.*
Fig. 15.—Amulet made of five metals.
Fig. 16.—Amulet of alloy of five metals.

B. Votive Offerings.

PLATE XVI. Amulets.

Fig. 1.—Bone for cramp.
Fig. 2.—Infant's wrist amulet.
Fig. 3.—Iron amulet for bullock.
Fig. 4.—Bone ("ivory") amulet for bullock.
Fig. 5.—Medicinal amulet for bullock.
Fig. 6.—Black glass "Breaking Bangle."
Fig. 7.—Seeds for cough.
Fig. 8.—Bone ("ivory") finger ring.
Fig. 9.—Hair bracelet.
Fig. 10.—"Tiger's" tooth.
Fig. 11.—"Tiger's" tooth.
Fig. 12.—"Tiger"-skin armlet.
Fig. 13.—"Tiger" oil in case.
Figs. 14, 15, 16.—Finger rings of chank shell.
Fig. 17.—Finger ring of white glass.
Fig. 18.—Chank shell for bullock.
Fig. 19.—Hair-rope with chank shell rings, for bullock.
Fig. 20.—Amulet of horn.
Fig. 21.—Charmed musk-sac.
Figs. 22, 23.—Metal amulet cases.
Figs. 24, 25.—Amulet cases on silver chains.
Fig. 26.—Yantra on copper.
Figs. 27, 28, 29, 30.—Yantras on ola-leaves.
Fig. 31.—Black glass finger ring.



PART OF A DEVIL-DANCER'S OUTFIT.

SINHALESE MAGIC.



OBJECTS USED IN DEVIL-DANCING.
SINHALESE MAGIC.























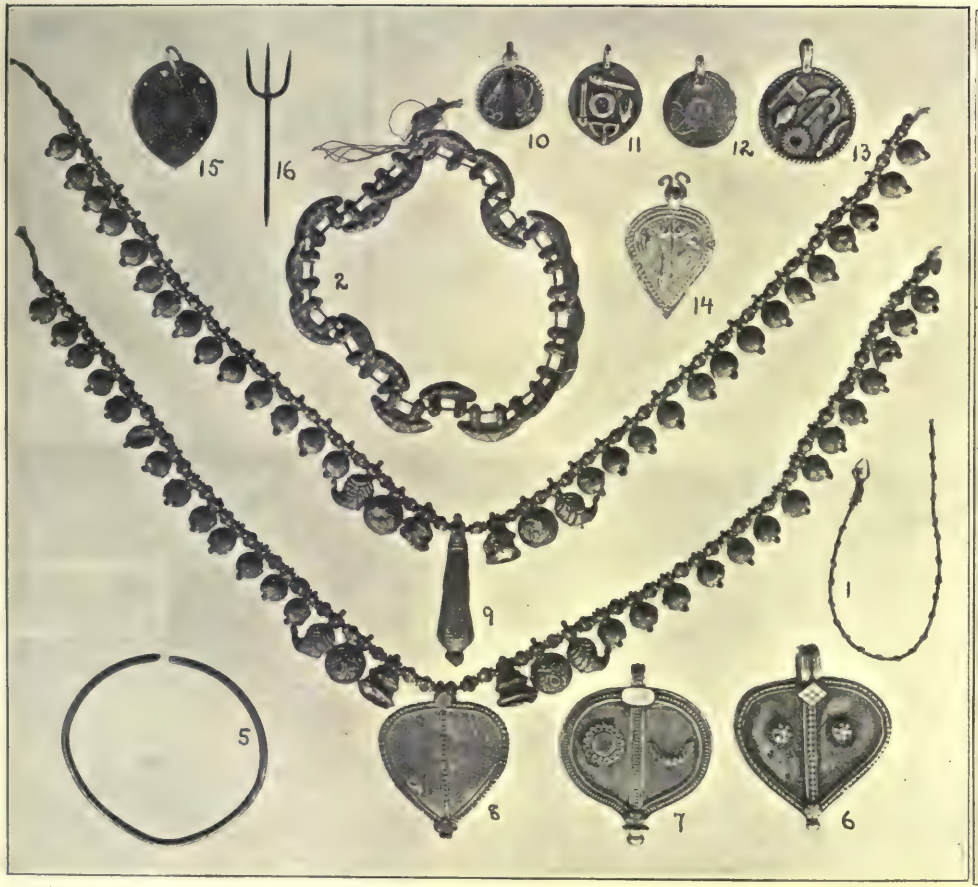
SINHALESE MAGIC.







SINHALESE MAGIC.

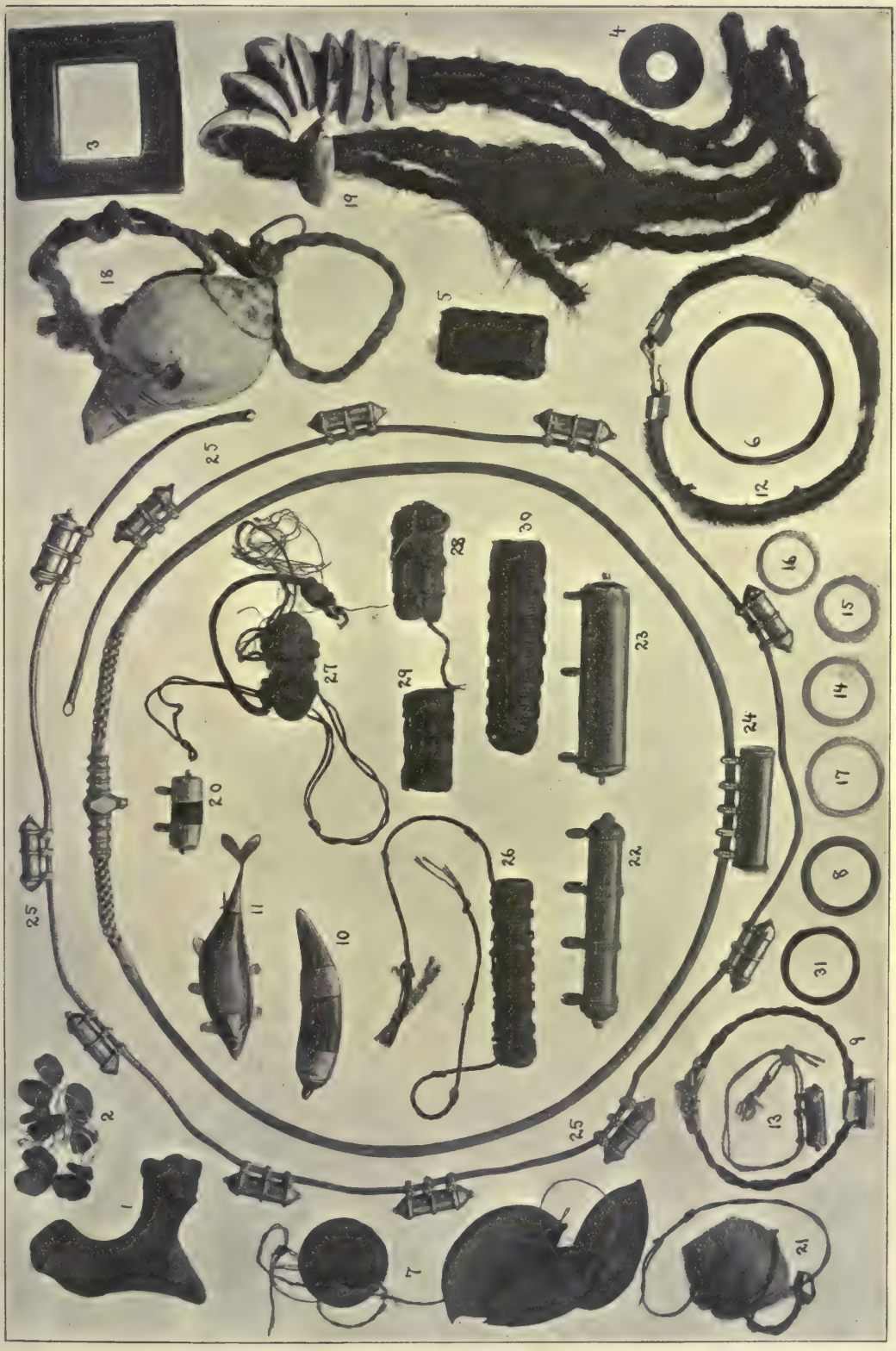


A.—AMULETS.



B.—METAL VOTIVE OFFERINGS.

SINHALESE MAGIC.



AMULETS AND AMULET CASES.

A MALAY CIPHER ALPHABET.

By R. A. Kern, of the Netherlands Indian Civil Service.

[With Plate XVII.]

Prefatory Note by C. O. Blagden, M.R.A.S.

The subject of the following communication is a secret script or cipher alphabet which is occasionally used by the Peninsular Malays. Their ordinary writing, as is well known, has for some centuries past been the Perso-Arabic character, slightly modified by the addition of a few new letters, differentiated from their prototypes merely by the addition of a greater number of dots, to represent sounds (such as *ṅ* (*ng*), *ñ* (*ny*) and *p*), which occur in Malay but not in the Arabic language.

The existence of this secret script has been known to a few European scholars —among them Mr. Hugh Clifford and Mr. Hervey – for some time past, but I believe it has not hitherto been communicated or described. It does not appear to be known to very many Malays, nor is it in very frequent use.

The immediate occasion of its discovery was a request addressed to Mr. G. M. Laidlaw, of the Perak Government Service, by Mr. W. W. Skeat, to search for possible traces of the pre-Muhammadan script known to have been employed by the Malays of the Peninsula in former times. Mr. Laidlaw, in the course of his search, came accidentally on the track of this cipher alphabet. Mr. Laidlaw, to whom the credit of supplying this record of the secret script is therefore due, was told that this was the writing in which the *Chiri*, the old coronation formula of Malay rajas (which is certainly of Indian origin and apparently Sanskrit, in a corrupt form) was written down, and from which it was subsequently transliterated into the modern Malay Arabic character.

This, of course, is a question of fact, but even if it could be proved that the *chiri* had been for some time past thus kept secret from the mass of the people, there can be no doubt that this cipher does not represent the script in which the *chiri* would have been originally written down. It does not appear that this secret script stands in any close relation to the old alphabet of the pre-Muhammadan Hinduized Malays. Dr. Kern, to whom, as the highest living authority on these subjects, I forwarded a specimen of this *gangga Malayu*, as it is called, writes that the old Hindu script of the Malays is still in use in the neighbourhood of

Palembang (Sumatra), where it is known as the Renchong alphabet, and that it is quite different from and apparently unconnected with the *gangga Malayu*.

From a simple inspection of the latter, I had observed that the system on which the vowels were denoted seemed to indicate some sort of Indian influence, but this fact is sufficiently explained in Mr. R. A. Kern's paper, in which it is ascribed to a Javanese model. The Javanese alphabet is, of course, ultimately of Indian origin.

It is obvious that a great part of the *gangga Malayu* was made up from a limited number of elementary letters, modified more or less on the lines of the Arabic character: but it at first seemed possible that some, at least, of the primary elements themselves might be of ancient date, and might possibly go back to pre-Muhammadan days. The early history of the Peninsula is so obscure that one cannot but wish it, and it would indeed be interesting, if any student of Indian scripts should be able to prove such correspondences in the case of the ten letters (*jim*, *cha*, *ha*, *kha*, *pa*, *kop*, *kap*, *ga*, *nun* and *wau*) that remain unidentified by Mr. Kern. In any case this cipher is not without interest as affording fresh evidence of the inventiveness of the Malayan culture, and it is hoped that other versions will now be collected and throw additional light on its origin. In the meantime I may be permitted to express here my obligation to Dr. Kern and Mr. R. A. Kern for the valuable information on the subject which they have been good enough to contribute.

Mr. C. Otto Blagden lately wrote to my father enclosing a short letter in a Malay cipher script together with an alphabet. The existence of the script was said to be known to a few European officials in the Malay peninsula, but the fact has not yet been recorded in any scientific journal.

The specimen supplied originates from the native state of Perak on the western coast of the Malay peninsula, north of Malacca. The existence of the script is reported to be known to many Malays and to be used to some slight extent, though we are not informed what are the cases to which its use is limited. The native who furnished the cipher tells us that he learnt the script from his father, but he is unable to furnish any information as to its origin. So we can only conclude that it is not of very recent contrivance. It is called by the natives *gangga Malayu*.

The alphabet consists of thirty-two characters, corresponding to those of the Arabic-Malay alphabet, *fa* (ڤ) excluded. The greater part can be traced back to the usual characters, being reversions of these in a vertical or horizontal direction, and by the replacing of the dots by short strokes variously attached to the character that forms the basis of the several letters, which are differentiated in the ordinary writing by the number of dots employed in each case. The letters with a vertical position (*alif* ا and *lam* ل; for *dal* د see below) are reversed along a vertical line, the Arabic *lam*, with a slight modification, thus giving the form of the cipher *lam*.

The following letters which have a lateral extension are reversed horizontally (*e.g.*, ـــ becomes ـــ): they are *ba, ta, mim, ha, ya, nya.* The common fundamental types of *ba, ta,* and *nya* can easily be recognised in the accompanying alphabet, the strokes being variously represented: thus *ba* has a cross stroke at the foot of the vertical line; *ta* has the same but prolonged, as is also the horizontal line of the fundamental type. Both of these strokes are slightly curved, thus making the difference between *ba* and *ta* the more obvious.

When not standing alone or at the end of a word, *ya* in the ordinary Malay script, with the exception of the dots, is the same as *ba.* In the secret script we find them to be the same also. Instead of two dots, a stroke is drawn parallel to the vertical stroke at the left end of the horizontal line. *Nya* (with three dots in the ordinary writing) looks like *ya,* but has an additional stroke in the centre, parallel to those at the two extremities.

M is the reverse of ـ (initial), the left end being prolonged into a curl (ـ).

H at the end of a word is usually written in Malay ـه. By reversing it horizontally (as in the case of *m*) we get the *ha* of the secret alphabet.

The letter *tha* (ـث) in the Gangga Malay, I cannot make out; it does not appear to be what one would expect, viz., the same character as the secret *ba,* distinguished by strokes.

J, h and *kh* can all be reduced to a common type, resembling the Roman *H*; *kh* has the cross stroke produced horizontally to the right; *j* has in addition a horizontal stroke connecting the upper extremities of the vertical lines. I do not see any correspondence between the Arabic and Gangga Malayu fundamental character, nor between the three before mentioned and *cha,* which stands wholly apart.

Dal in Gangga Malayu is a double letter formed by د and its reverse (separated by a vertical line), which cuts the letter in the middle; the Gangga *ra* appears to be the Arabic *ra* placed horizontally.

The dots of *zal* and *ze* have been replaced in both cases by a stroke.

Sin and *shin* are a pair of unidentified letters. They bear some resemblance to these letters in ordinary Malay, as they are usually written at the beginning of a word. The substituted stroke for the dots appears here too.

Sod is the Arabic character ـص without the downward curve; *toh* is the Arabic ط with the omission of the vertical line, the dots of *thod* and *zoh* being again changed to strokes.

Substantially the letters *ain, rhin* and *nga* have become a curve left open at the top; in the middle of the curve strokes have been drawn upwards and downwards to distinguish *rhin* and *nga.*

Pau, na and *wun* are wholly unintelligible to me; so is *ka.* The development of *ga* from *kap* is clear; *kop* is half a *ga.*

The vowels and many marks belonging to the Arabic alphabet have also been provided for in the Gangga Malayu. Two striking features may be observed.

Some of them are the Malay reversed in the same way as some of the consonants described above, so that what is usually written above the letters is now placed below them and contrariwise. Secondly, some of the marks of the Javanese script have been imported.

The vowel *a* is not expressed, the consonant, without further explanatory token, being pronounced with an *a*-vowel, *ba*, *ta*, *na*, etc.; only *aa* is indicated by the *fathah*, placed below the consonant.

No difference is made between *a* and *ĕ*.

In Malay, two letters only, و and ي, are used for representing the vowels *o* and *u*, *e* and *i*. In the Malay cipher alphabet this system has been retained, but the vowel-marks used are not to be derived from Arabic-Malay prototypes. They are Javanese, though written in the Malay manner. The Javanese script has four distinct types for *i*, *u*, *e* and *o*, but only two of these (*i* called *wulu* and *u* called *suku*) have been adopted, their employment being extended to *e* and *o* respectively.

The vowels *i* and *ai* are distinguished from one another in a somewhat original manner. If the *wulu* is required to express *ai* the consonant bearing the *wulu*-mark is followed by a *jazma'd y*.

Wulu and *suku* are always written, making the use of *kesra* and *dhamma* superfluous.

The *tanwin* are constructed as follows: *an* is written under the line, *in* above. The two strokes no longer run parallel but at right angles to one another. *Un* is indicated by the *suku*, intersected by a stroke. This mark is apparently also used to render the ĕ or a of the suffix -kĕn (-kăn).

The *tashdid* is moved from the upper to the lower side of the line without being reversed.

The *jazma* is also moved to the lower side and takes the form of a dot.

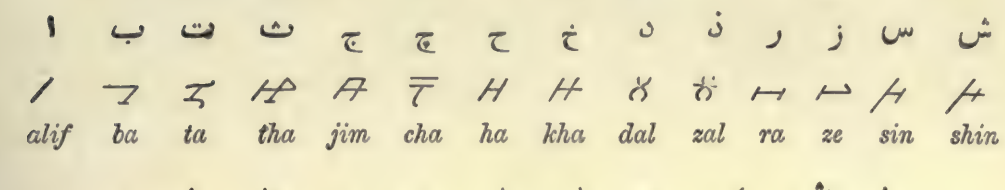
The above letter gives no information bearing on the use of *wasla*, *madda* and *hamza*.

In addition, two more Javanese symbols are used in the letter, the *layar* ꦂ and *chĕchaq* ꦃ, both totally unknown in Malay writing. In Javanese both are placed above the consonant and have the effect, in the case of the *layar*, of closing the syllable with an r; in the case of the *chĕchaq* with the nasal letter ng. In the Gangga Malayu this disposition has not been changed.

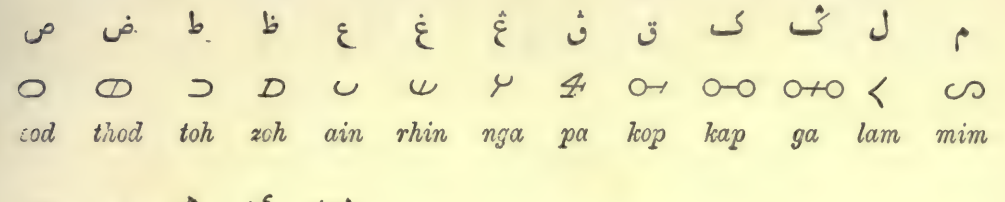
As to the form of numerals, 2, 6, 7, 8, 9, are one series; 3, 4, 5, a second, both being formed in the same way by adding a stroke to each succeeding figure. O is the Javanese o. The relations of 1, 2, 3, need no further explanation.

Though the Javanese have a script of their own, which is used in their everyday life, the Arabic characters are known to them also, and are not confined to works composed in the Arabic language only. They are highly in favour with pious Mohammedans and have been adapted to writings in Javanese, especially on religious subjects, but, unlike the Malays, the Javanese when using the Arabic characters, are anxious to express all vowels quite distinctly, in accordance with their own script, which is exemplary in this respect.

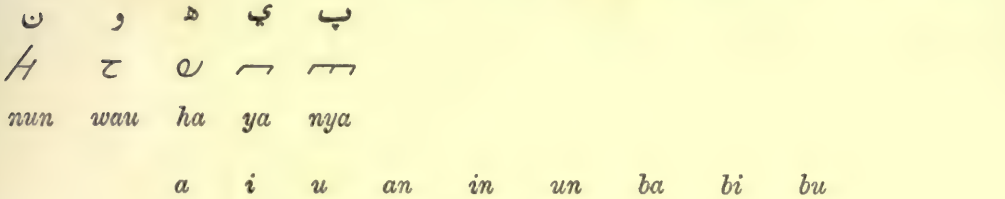
ARABIC-MALAY ALPHABET AND GANGGA MALAYU COMPARED.



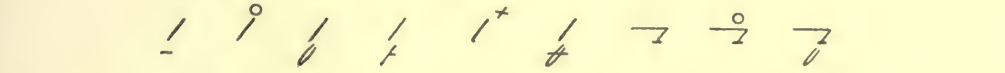
alif *ba* *ta* *tha* *jim* *cha* *ha* *kha* *dal* *zal* *ra* *ze* *sin* *shin*



sod *thod* *toh* *zoh* *ain* *rhin* *nga* *pa* *kop* *kap* *ga* *lam* *mim*

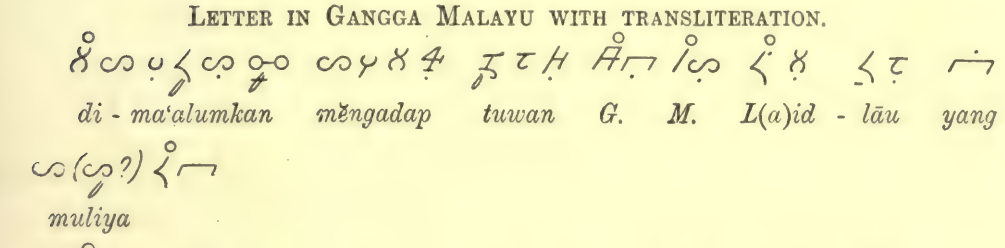


nun *wau* *ha* *ya* *nya*



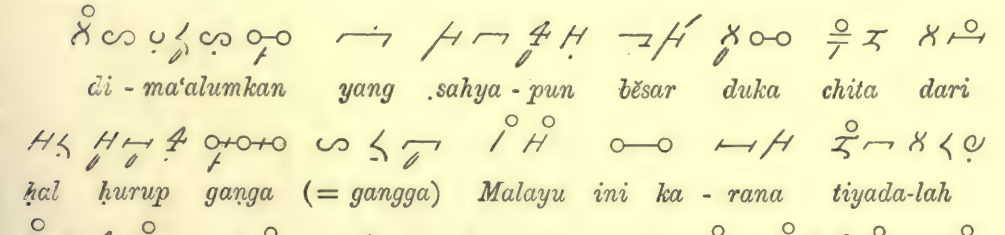
a *i* *u* *an* *in* *un* *ba* *bi* *bu*

LETTER IN GANGGA MALAYU WITH TRANSLITERATION.



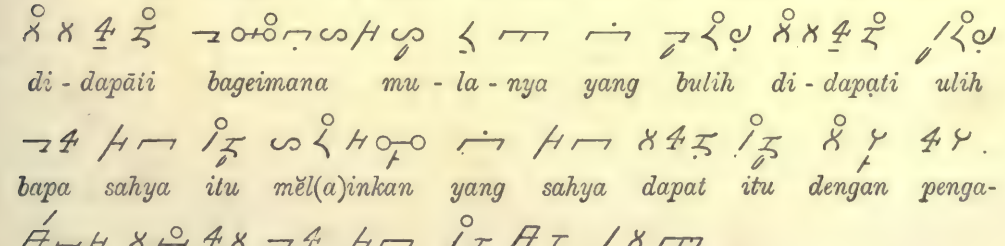
di - ma'alumkan *mĕngadap* *tuwan* *G.* *M.* *L(a)id - lāu* *yang*

muliya

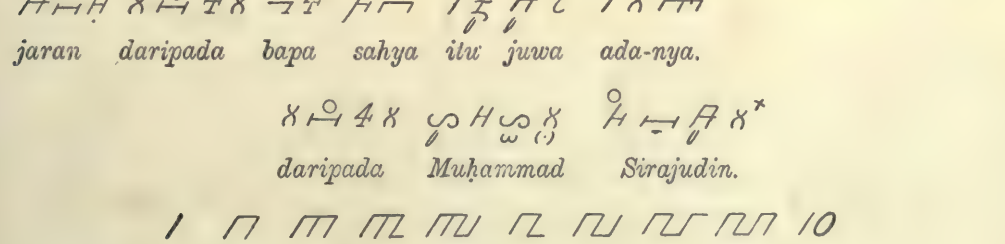


di - ma'alumkan *yang* *sahya - pun* *bĕsar* *duka* *chita* *dari*

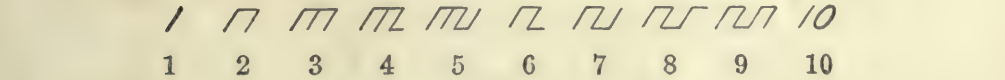
ḥal *ḥurup* *ganga* (= *gangga*) *Malayu* *ini* *ka - rana* *tiyada-lah*



di - dapāti *bageimana* *mu - la - nya* *yang* *bulih* *di - dapaṭi* *ulih*



bapa *sahya* *itu* *mĕl(a)inkan* *yang* *sahya* *dapat* *itu* *dengan* *penga-*



jaran *daripada* *bapa* *sahya* *itu* *juwa* *ada-nya.*



daripada *Muḥammad* *Sirajudin.*



1 2 3 4 5 6 7 8 9 10

A MALAY CIPHER ALPHABET.

Now, as I have set forth above, the Gangga Malayu is intermixed with marks peculiar to the Javanese script, but these marks have not been consistently adopted in their entirety. This leads me to suppose that the Gangga Malayu has been invented by Javanese living in a Malay country and well acquainted with the Malay way of writing, so as to feel no inconvenience in expressing the vowels in the less accurate Malay manner.

There are many Javanese living at Singapore and at other spots along the coast of the Malay Peninsula (religious men among them), which fact seems to support the above supposition. There have also been, for centuries, Javanese settlements in various parts of the Peninsula.

Further investigations may, I hope, throw more light on the question of the comparative age of the Gangga Malayu and the extent of its distribution.

TRANSLATION OF THE GANGGA MALAYU LETTER. [Plate XVII.]

[This] information [is] unto-the-presence of Mr. G. M. Laidlaw [who is] illustrious.

He is informed that I [am] very sorrowful with regard to [the] letters of Gangga Malayu this because [I have] not got [*i.e.*, acquired them] as originally they were able to be got by my father that however which I [have] got that [is] through instruction from my father.

From Muhammad Sirajudin.

[Numerals up to ten follow.]

A LAST CONTRIBUTION TO SCOTTISH ETHNOLOGY.

By John Beddoe, M.D., LL.D., F.R.S.

[With Plate XVIII.]

I propose a little consideration of the progress of Scottish Ethnology, before entering on any criticism of Mr. Gray's valuable paper (*Journ. Roy. Anthrop. Inst.*, xxxvii, p. 375).

Fifty-five years ago, when I brought out my *Contribution to Scottish Ethnology*, there were others already engaged in laying the foundations of the subject. Daniel Wilson had anticipated the theory of the succession of Neolithic dolicocephali and bronze brachys, which Thurnam afterwards elaborated; and Arthur Mitchell had studied the physiognomies of Northern Scotland, and carefully marked out three leading types. My observations showed the preponderance of light eyes with dark hair on the western, and of light eyes with light hair on the eastern, and especially the south-eastern, side of the country, with an increase of dark shades in the towns.

Next in order (in 1870) came my collections for the Stature and Bulk of Man in the British Isles, printed in the *Anthropological Memoirs*, vol. iii. Among the reports sent in to me were many of great value; and some of those from lunatic asylums were by distinguished men, such as Sibbald, Aitken, Howden, Grierson, Lindsay. Noteworthy deductions were the great stature in the Merse, Upper Galloway and Kyle, the inferiority of lunatics to the general population, the physical degeneration in the great towns. These are more or less confirmed by Mr. Tocher's recent observations on the insane.

Next in order came the observations on the West Highlanders, respecting stature, colour and craniometry, contained in my *Races of Britain*, 1885. The chief points were the good stature, 1727 mm., the preponderance of light eyes and dark hair, the large size and low breadth index (76·27) of the head.

Next followed an important advance due to Sir Wm. Turner, who, dealing with a large quantity of material, showed the hitherto unknown frequency of brachycephaly in modern skulls from such districts as East Lothian and Fife, but not, apparently, in the west.

On Mr. Tocher's statistics of the insane, published by the Henderson Trust, I have already commented. They agree with mine of forty years ago in indicating a higher stature in Argyle and in the Border Country than elsewhere. He also agrees with me in showing a low cephalic index for Argyle, while over the whole north of Scotland his indices are high for Britain, 78 or more. His mean stature for the whole of his material is lower even than mine (65·86 inches or 1673 mm.), mine being 66·62 inches or 1692 mm.; but this difference probably arises not so

much from a real fall in average stature during the last generation, as from the fact that my directions to my helpers excluded idiots, persons not in good bodily health, and those under twenty-three or over fifty years of age, whereas his did not.

I come now to the latest contribution to our subject, the pigmentation survey of Mr. John Gray and Mr. Tocher.

The method of collecting the facts, viz., the colours of the hair and eyes in all or most of the school children of Scotland, left, I think, little to be desired; though Mr. Gray rightly regrets that standard colour-cards could not be used, owing to the failure of the people employed to produce sufficiently accurate ones. Many attempts have been made in former years to produce such cards, in fact all of us, from Broca downwards, who have been interested in the subject, have tried our hands on such attempts; for example, General Pitt Rivers made an endeavour, and took great pains about it; but the result was a lamentable failure. The tints were flat, and flat tints cannot represent hair. I tried stripes without satisfying myself. The only man who has ever been moderately successful has been Topinard, who collected and arranged his material for all France with the assistance of irregularly striped and coloured diagrams, which, however, represented only the median tints (our brown, the French *chatain clair*, the German *hellbraun*); he also designed representations of the median hues of eyes, dark grey, pale ashy brown, hazel-grey, light fawn and green. With these one can produce tolerably trustworthy indices of nigrescence of both hair and eyes.

It is as impossible, however, entirely to get rid of the personal equation as it is to command the weather. Sunshine or shade, clear or dull sky, indoor or outdoor observation, must always affect our judgment of colour, which, one needs to remind oneself sometimes, is not an intrinsic quality of objects.[1] But internal evidence leads me to appreciate highly the work of these Scottish schoolmasters, from this point of view.

Among the numerous small difficulties with which one has to contend in this kind of quest, is that of correctly correlating the hair-colour of boys and of girls, the former generally short-cropt and neglected, the latter long, outspread, combed, often washed. Exposure to water, especially soapy water, sun and air, tends to bleach the tips and surface at least of the hair. Natural sexual differences of this kind have not been very much studied; but my own observations point to greater pigmentation of eye, if not of hair also, among females in Great Britain, and Havelock Ellis (*Man and Woman*, pp. 224–228) adduces a good deal of evidence to the same effect from other countries. The Scotch schoolmasters find no great difference on the whole, 22·81 per cent. of dark eyes in the girls to 22·31 in the boys, and 26·57 of dark hair to 26·27. There are several districts (*e.g.*, Midlothian, Sutherland, Dunfermline) where the hair of the girls comes out much lighter than that of the boys, and a few (*e.g.*, Islay, etc., Nithsdale, Kirkcaldy town) where

[1] Topinard's standards are for use in bright sunlight. Their employment in Scotland would yield too many blonds.

their hair is lighter and their eyes are darker. Mr. Gray, a strong believer in sexual heredity, seems to think that Queen Margaret may have brought the fair Saxon ancestresses of the Dunfermline girls from England with her. I am more disposed to think that the matrons of "grey Dunfermline" washed their daughters' hair preparatory to the inspection, especially when I note that the eye-index of the boys and girls is identical. It is perhaps to be regretted that Mr. Gray did not affix anything beyond mere ordinal numbers to his 110 or, more accurately, 102 districts, as a means of identification. In a large number of cases, in a majority indeed, their boundaries do not correspond with those of counties or other well-known divisions, and as laid down in the map are not strictly accurate. Though I am probably as well acquainted with Scottish topography as most Englishmen, I cannot positively identify some of these districts, especially the small ones around Glasgow, and in the tables which I have drawn out from Mr. Tocher's figures I have been obliged to trust to, and cite, the numerals alone in several cases.

The inclusion of jet black among the categories of hair-colour is fully justified by the results of this census. The personal equation may interfere here as elsewhere, but less often than in the cases of "red" and "fair," for example, in which the boundary is less distinct, and error is easy. The average of jet black hair in Scotch children is set down at about 1·2 per cent. in both sexes; but I find over 2 per cent. reckoned in fifteen districts. In three of these this proportion is reached in boys only, though there is a considerable but smaller excess in the girls also. These are Nos. 55 and 56, East Fife; 95, East Ross; and 90, Lower Moray. In five it occurs in girls only, these being 59, Stirlingshire, Menteith, etc.; 93, 94, Beauly and Lochness; 103, Arran and Kintyre; 107, Uist; and 108, Lewis and Harris. The seven in which both sexes present this great excess of jet black are 70, 71, Athol and Breadalbane; 91, Strathspey; 99, Skye, W. Ross, Glenelg; 100, Mull, Morven, etc.; 97, Caithness East Coast; 70, Gowrie; and 18 (probably the town of Paisley). It will be seen that with the exception of the long-urbanized Paisley, and of East Fife, an ancient seat of foreign commerce, the whole fifteen are either within, or astride of, the Highland frontier. Except Paisley, there is not a single instance south of the Forth, nor one between the Spey and the Firth of Tay.

Surely there is something "racial" here. Jet black hair does not readily develop, it would seem, from urban selection; otherwise Paisley would not stand alone as a town in our list. It belongs apparently to the Gael, but not to the Scots of Dalriada alone, but also to the eastern and northern Gael,[1] who are at least partly of Pictish descent. It does not, however, seem to be conspicuous in Mr. Gray's Galwegians, who were the only Picts still known as such in the middle ages, and who still rank as dark haired both with him and with me.

I cannot understand under what curious misconception Mr. Gray can be lying, when he says (p. 384) that "black hair is not stated in a separate category

[1] *i.e.*, the excess of black hair is common to the speakers of all three dialects of Scottish Gaelic.

by European observers," and (p. 385) that "there are no data" (as to black hair) "for comparison with other countries." So far from this being the case, there is scarcely a European observer of children's colours who does *not* make black a separate category. Virchow in Germany, Georg Mayr in Bavaria, Schimmer in Austria, Majer and Kopernicki in Poland, Kollmann in Switzerland, have all done so. So did Vanderkindere in Belgium, but as I have elsewhere[1] pointed out, his observers included many dark browns under black (*noir*) just as Virchow's included under blue eyes our blue-greys if not even some light greys, so vitiating comparisons. Livi and Retzius and Fürst all employed a black category, but as they worked on young adults their results are not comparable with Gray's.

The modern biometrical school seems to be bent on upsetting our most cherished prejudices. And Mr. Gray, on the strength of an observation in the fashionable county of Dorset, says that "it is probable that there is not much difference between the percentages of red hair in Scotland and in England"; whereas we were accustomed to suppose that, barring perhaps the Votiaks and one or two other such remote tribes, the Scots were the most rufous folk in existence. In fact—not to quote my own pretty numerous observations—the military statistics of young male adults give, for Scotland, 4·7 per cent. of red hair; for Ireland, 4·5; for Wales, 4·4; and for England, 3·5 per cent.[2] There is little in Holland (1·81) and not much in Flanders (2·18); but in Westphalia and other parts of the old Saxon land I found as much as 3·8 per cent. The German red, however, usually verges on pale yellow; and the great unpopularity of the colour in Germany led to its being almost ignored by Virchow's schoolmaster-agents.

I have constructed a map to illustrate the tables into which I have boiled down those of Messrs. Gray and Tocher. It is based on the Compound Index of Nigrescence, which is gotten by adding the index of the eyes to twice the index of the hair; this is done with the object of attributing greater weight to the more important characteristic. But I have also inserted the original Index of Nigrescence, which represents the hair only, and is gotten by subtracting the red + the fair from the dark + twice the black. It is generally positive in England and Scotland, and almost always in Ireland. The eye-index, also inserted, is gotten by subtracting the light, including blue, blue-grey, and light grey, from the brown or dark, neglecting, as in the case of the hair, the median hues: in Scotch children this is always a minus quantity, as is also the compound index.

I think it will be acknowledged that the racial indications of Messrs. Gray and Tocher's figures are most simply and clearly developed by my map and tables. Probable influences of climate, if they exist at all, are indistinct. The west and south-west of Scotland are warmer, no doubt, than the east and north-east, and also wetter and perhaps less sunshiny, and they furnish the largest proportions of dark hair. But racial and historical causes will account for most of the phenomena,

[1] In my Huxley lecture on "Colour and Race" (*Journ. Anthrop. Inst.*, xxxv, 1905, p. 219).

[2] *Races of Britain*, pp. 190–193. In the north of England the percentage is higher, in the south lower than this.

(among which is the fact that most of the fairest districts lie well towards the south) while urban selection may be appealed to for an explanation of the rest.

The indications are that the earlier pre-Anglian population was generally dark in hair and light in eye, though it spoke two if not three different languages, and though there may have been differences in prevailing types corresponding thereto to some extent.

It would be of great interest if we could make out a surviving type for the Strathclyde Walenses, who were still distinguishable from Scots, Picts and Angles, in the earlier middle ages. But the place-names in Strathclyde and its neighbourhood do not help us much, and the Welsh were probably Anglicised before the general adoption of surnames.[1] The range of hills that separates Lanarkshire from Ayrshire would probably be the best hunting ground for traces of them, and perhaps Lesmahagow and Douglasdale would repay investigation.

I have made an endeavour to divide most part of Scotland into several ethnological provinces, using Mr. Gray's data, and averaging the divers indices of the several districts included in each province. This method is not arithmetically accurate, of course, but it is sufficiently so for my purpose.

Provinces.	No. of districts.	Indices of		Compound index.
		Hair.	Eyes.	
Anglian	7	−10·7	−25·6	−47
N.E. Lowlands	10	− 8·4	−24·5	−41·3
Fife, etc.	6	− 7·9	−21·6	−37·4
Norse (more or less) ...	6	− 6·7	−23·3	−36·7
Clydesdale	12	− 6·1	−24·	−36·2
East Highland	4	− 1·4	−29·9	−32·7
Galloway...	3	− 1·1	−23·1	−25·4
West Highland ...	6	+ 2·5	−27·5	−22·5
Towns	20	− 1·38	−19·8	−22·5
SCOTLAND		− 3·84	.−22·5	−30·2

The provinces are here arranged in the order of lightness of both eyes and hair; but it will be observed that the order of index of hair, taken singly, almost exactly corresponds, whereas the index of eye-colour runs irregularly, and is largest in the Highlands. I have excluded from my province of Clydesdale, whose limits are those of Mr. J. A. H. Murray's dialect map, the populous districts around Glasgow, as having been foci of recent immigration and perhaps, too, areas of some forms of selection. There is nothing clearly distinctive about the Clydesdale figures—just a trifle more darkness of hair and lightness of eye than

[1] The distinguished surname of Pringle (Hopringle or Ap-pringle) is claimed as Welsh ; but I know of no other presumably Welsh patronymic in southern Scotland.

in the means for all Scotland. Two considerations occur to me, first, that the Kymric Kelts in Scotland simply overlay the Gaels, and, though they changed the language, may not have much affected the physical type; and second, that, judging from the place-names and what of local history remains, it is likely enough that at one time and another considerable waves of Anglian colonization may have overflowed Lanarkshire and Kyle and Cunningham; the last district, by the way, actually bears an English name. And such waves may have lightened the colours in places, without much affecting the cranial or facial types.

Various lines of probability, among which these statistics of Mr. Gray's may be reckoned, combine to show that the native Keltic or Pictish population of the north-eastern Lowlands was gradually and almost wholly swamped by Flemish, Norse and Saxon settlers. Yet an ordinary map shows us comparatively few local names there that are not Keltic, fewer indeed, as I think, than in Clydesdale where such places as Dolphinton, and Symington and Eglinton bear witness to the settlements and their leaders.

Another district, interesting by reason of its very dark colours, is No. 95 of Gray, which apparently includes parts of the Munros' and Rosses' countries, and the south-east coast of Sutherland county. It may be considered in conjunction with 97 and 98, the two divisions of Caithness, which unfortunately have not been arranged to correspond with the boundary of the languages. Had they been so, perhaps we might have detected an ethnic difference between the eastern Norsemen and the western Gaels,[1] which, as it is, does not come out. Mr. Gray's 97 includes the long seaboard stretch of the Gaelic parish of Latheron; and though there are both Norse place-names and Norse surnames in that parish, all the Latheron men whom I have seen (and they have not been very few) have had dark or black hair.[2] Again, in east Ross and south-east Sutherland, such place-names as Tain and Dingwall, and Brora and Helmsdale, indicate a ruling population at least of Scandinavians; and though the clans Munro and Ross were probably purely Keltic, and the former is even derived by an untrustworthy tradition from Ireland, the names of the MacIvors and Gunns sound otherwise. These little districts deserve more minute study, which I hope Mr. Gray will be able and willing to give to them. He must have in his possession, and capable of separate analysis, the material for such districts as the Norwegian Butt of Lewis, where, as a native once told me, "there was something almost disreputable about dark hair," for Harris, or for the islands of Colonsay, Barra, Iona, Lismore, Jura, Seal, and Luing; or for such elevated villages as Castleton of Braemar, Wanlockhead, and Leadhills; for Coningsburgh in Shetland, or for that abode of giants Balmaclellan in Upper Galloway.

[1] See return from Forss in my *Stature and Bulk* in which it is well marked.

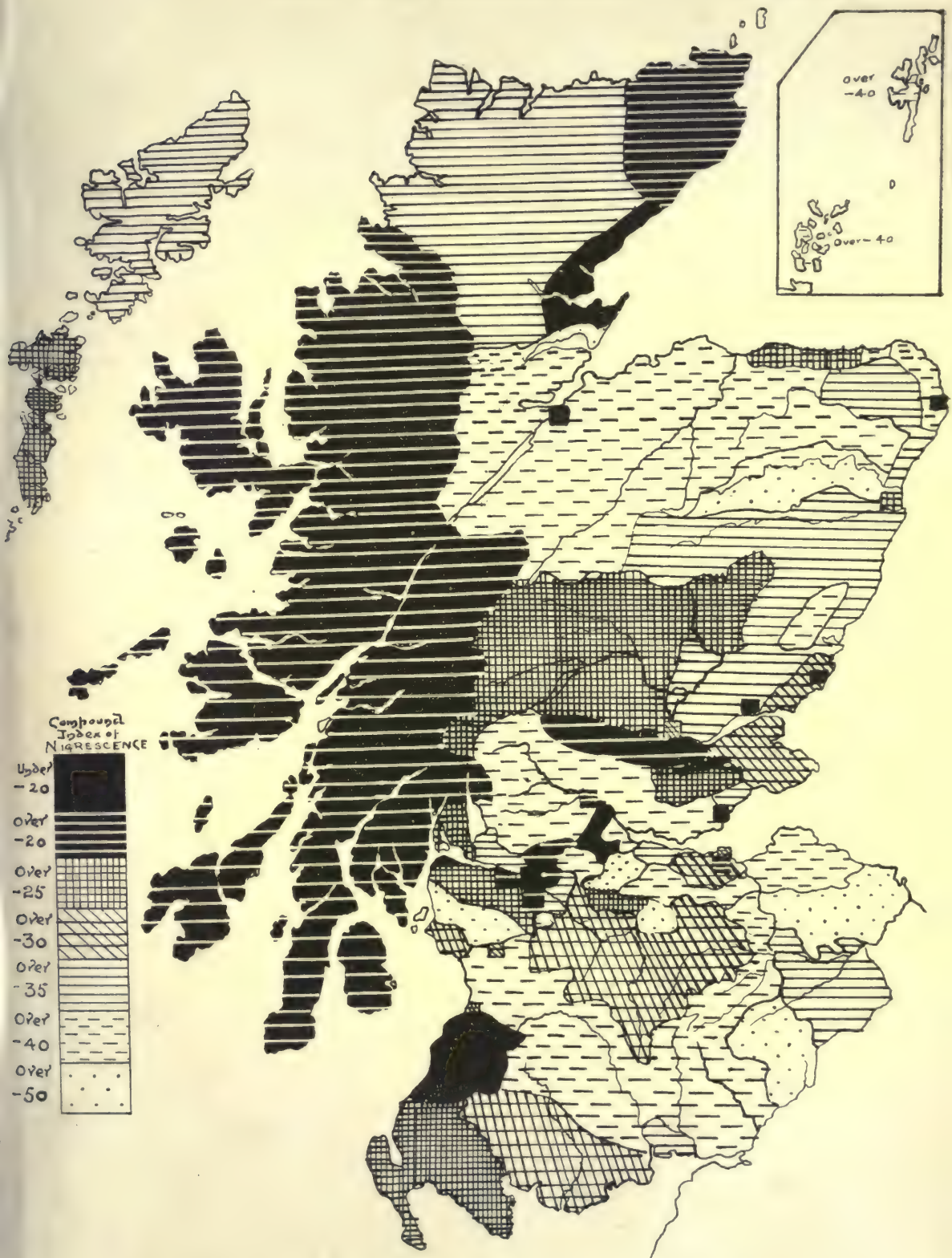
[2] The Norsemen often brought their thralls with them; and these might be of Finnish, or Irish or other alien blood, and may probably have been often brachycephalic as is the case in South-western Norway at this day.

TABLE INDICATING ORDER OF COLORATION IN MR. GRAY'S DISTRICTS OF SCOTLAND, FROM HIS OWN DATA.

		Index of Nigrescence, hair.	Index of Nigrescence, eyes.	Compound index.
64	Arbroath	+ 2·6	−11·5	− 6·3
95	East Ross and East Sutherland.	+ 5·6	−23·4	−12·1
50	Kirkcaldy	+ 0·9	−14·3	−12·5
13	Glasgow	+ 2	−18·3	−14·3
24	Greenock	+ 2·6	−20·5	−15·3
81	Peterhead	0	−15·4	−15·4
63	Falkirk	+ 1·8	−20·7	−17
31	Carrick	− 0·3	−18·7	−19·3
66	Dundee town ...	− 0·9	−17·8	−19·6
62	Denny	+ 0·85	−20·5	−19·7
92	Inverness town ...	+ 1·5	−22·8	−19·8
60	Stirling town ...	− 1·8	−16·7	−20·2
98	Caithness, inner ...	− 0·3	−19·9	−20·5
103	Arran and Kintyre ...	+ 1·6	−24	−20·8
104	Bute, etc.	+ 0·1	−21·5	−21·3
11, 14	E. and S. Glasgow ...	− 1·0	−19·4	−21·4
101	Lochaber	+ 3·1	−27·6	−21·4
100	Mull, Morven, etc. ...	+ 3·6	−29·5	−22·3
58	Strathearn	+ 1·9	−26·3	−22·5
18	Paisley town	− 1·8	−19·7	−23·3
102	Islay, Knapdale ...	+ 5·5	−34·6	−23·5
12	Kirkintilloch... ...	− 1·8	−20·6	−24·3
97	Caithness ... East Coast ...	− 3·5	−17·3	−24·3
19, 20, 22	Partick Govan ...	− 2·1	−20·2	−24·5
99	Skye, Glenelg ...	+ 1·1	−27	−24·7
107	Uist	+ 2·5	−31·4	−26·4
16	S.W. Glasgow ...	− 3·1	−20·3	−26·5
17	Renfrewshire, east ...	− 0·8	−25·3	−27
86	Banff, littoral ...	− 8·2	−10·9	−27·4
57	Fife, interior	− 5·1	−17·4	−27·6
32, 33	Wigtonshire	− 1·1	−24	−26·1
No. 4		− 2·6	−23·2	−28·4
44	Edinburgh city ...	− 4·1	−20·1	−28·4
21	W. Renfrewshire ...	− 3·1	−22·4	−28·7
71, 76	Athol...	+ 0·3	−29·7	−29·1
105	Lennox, west... ...	− 1·6	−26·3	−29·5

		Index of Nigrescence, hair.	Index of Nigrescence, eyes.	Compound index.
77	Aberdeen city ...	— 5	—19·9	—29·9
25	Ayr town	— 2·7	—24·6	—30·1
	SCOTLAND	— 3·84	—22·5	—30·18
	Boys	— 2·94	—22·65	—28·53
	Girls	— 4·74	—22·35	—31·83
65	Angus, S. coast ...	— 2·9	—24·4	—30·2
29	Cunningham, littoral	— 3·3	—23·9	—30·5
34	Lower Kirkcudbright	— 2·1	—26·7	—30·9
7	?	— 4·9	—20·8	—30·7
46	Edinburgh, environs...	— 5	—21·4	—31·5
27	Kilmarnock	— 2·5	—26·5	—31·5
45	Leith	— 5	—21·3	—31·4
15	Blantyre	— 4·4	—23·2	—32·1
55, 56	East Fife	— 5·9	—20·4	—32·2
69	Perth city	— 7	—19·2	—33·2
3	Mid Lanarkshire ...	— 5·3	—22·6	—33·2
1	Upper Lanarkshire ...	— 7·2	—19	—33·5
6	?	— 6·2	—21·4	—33·9
41	Peeblesshire	— 5·8	—23·7	—35·3
No. 5	?	— 6·6	—21·9	—35·1
No. 9	?	— 5·6	—24	—35·3
35	Dumfries	— 5·2	—25·3	—35·7
84	Mid-buchan	— 3·5	—28·9	—36
70	Gowrie	— 7·4	—21·5	—36·3
67, 68	Sidlaws	— 7·8	—20·8	—36·5
79	Deeside	— 2·7	—31·5	—37
78	Aberdeen, littoral ...	— 8·3	—20·8	—37·2
72	Mearns and Angus, littoral.	— 6·9	—23·4	—37·2
48	Linlithgow	— 7·3	—23·4	—38·1
74	Mearns, littoral ...	— 5·4	—28	—38·8
54	Fife, mid. littoral ...	— 9	—21·5	—39·5
39	East Roxburgh ...	— 8·1	—23·3	—39·5
106	Dumbarton	— 9·4	—21	—39·8
75	Mearns, hills... ...	— 8·1	—23·6	—39·8
96	Sutherland	— 7·4	—24·9	—39·8
106	Lewis...	— 9·5	—20·9	—39·9
10	N.E. Lanark	— 8·4	—23·5	—40·4
87	? Huntley and Tomintoul.	—10·8	—18·8	—40·4
51	Clackmannan ...	— 7·5	—25·8	—40·8
53	Fife, S. coast... ...	— 9·5	—21·9	—41
82	Inner Buchan ...	— 7	—27	—41·1
86	Lower Banff	— 8·7	—23·8	—41·2
61	Grangemouth ...	— 8·1	—25·3	—41·6
43	Eastlothian	— 7·1	—27·4	—42

		Index of Nigrescence, hair.	Index of Nigrescence, eyes.	Compound index.
89	Nairn...	— 9·6	—23·2	—42·5
73	Brechin, etc.	— 7	—28·5	—42·5
52	Dunfermline	—10·3	—22·9	—43·5
40	Selkirkshire	—11·6	—20·9	—44·1
59	Stirlingshire, Menteith, Strathallan	— 5·6	—33·2	—44·4
91	Strathspey	— 7·6	—29·2	—44·4
93, 94	Beauly and L. Ness, etc.	— 4·2	—36·1	—44·5
36	Nithsdale	— 8·5	—27·7	—44·8
28	S. Cunningham ...	— 8·3	—28·2	—44·9
83	Buchan, littoral ...	— 7·9	—29·3	—45·2
37	Annandale, etc. ...	—10·1	—25·2	—45·5
90	Moray, lowland ...	— 7·7	—30·4	—45·8
26	Kyle	—10·9	—24·9	—46·7
110	Shetland	—10·7	—26·8	—48·2
109	Orkney	— 8·9	—30·3	—48·2
88	Moray, littoral ...	—12·1	—24·5	—48·8
	Midlothian	—11·8	—26·3	—49·9
	Strathdon	—10·1	—31	—51·2
38	W. Roxburgh ...	—13·4	—24·9	—51·7
23, 30	N. Cunningham ...	—10·1	—31·9	—52·2
2	E. Lanark	—16	—21·9	—54
42	Berwickshire... ...	—12·2	—30·3	—54·8
8	No. 8	—11·4	—33·8	—56·7
49	S. Linlithgow ...	—14·7	—29·6	—59·1



A LAST CONTRIBUTION TO SCOTTISH ETHNOLOGY.

THE EUROPEAN POPULATION OF THE UNITED STATES.

The Huxley Memorial Lecture for 1908.

By William Z. Ripley, Ph.D., Professor of Economics in Harvard University.

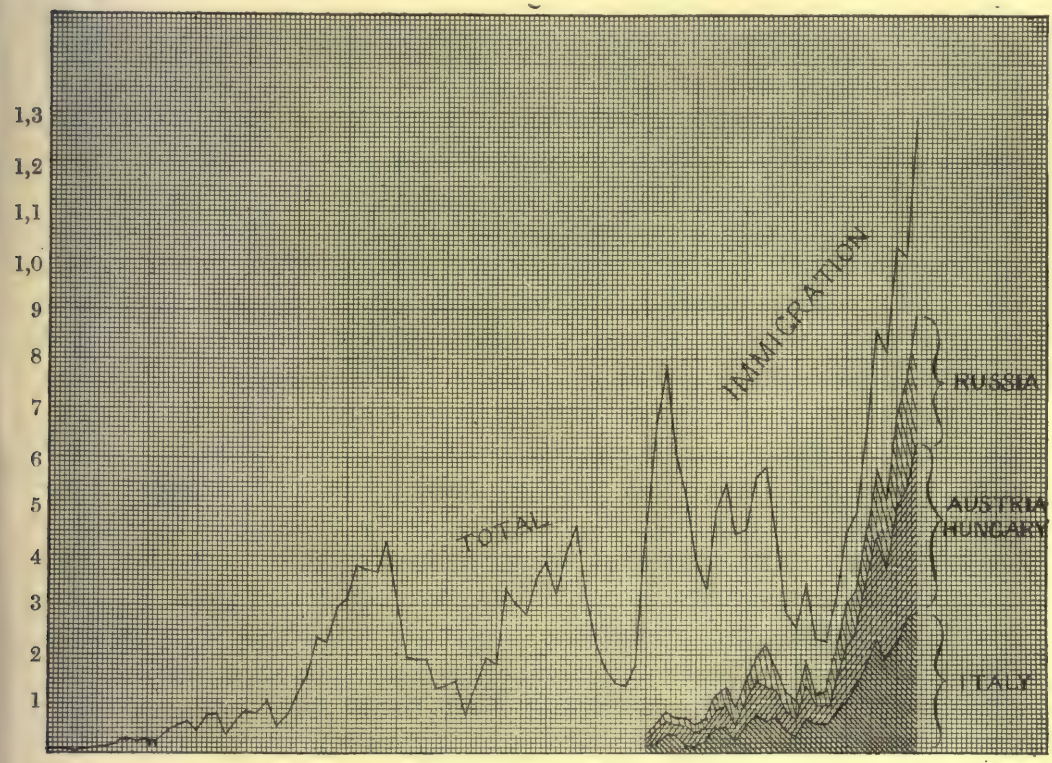
The population of Europe may, in a rough way, be divided into an East and a West. The contrast between the two may be best illustrated perhaps in geological terms. Everywhere these populations have been laid down originally in more or less distinct strata. In the Balkan States and Austria-Hungary this stratification is recent and still distinct; while in Western Europe the several layers have become metamorphosed by the fusing heat of nationality and the pressure of civilization But in both instances these populations are what the geologist would term sedimentary. In attempting a description of the racial problems of the United States, your attention is invited to an entirely distinct formation which, in continuation of our geological figure, may best be characterized by the term *eruptive*. We have to do not with the slow processes of growth by deposit or accretion: but with violent and volcanic dislocation. We are called upon to traverse a lava field of population, suddenly cast forth from Europe and spread indiscriminately over a new continent. In Europe the populations have grown up from the soil. They are still imbedded in it, a part of it. They are the product of their immediate environments; dark in the southern half, blonde at the north, stunted where the conditions are harsh, well developed where the land is fat. Even as between city and country, conditions have been so long settled that one may trace the results in the physical traits of the inhabitants. It was my endeavour in the *Races of Europe* to describe these conditions in detail. But in America the people, one may almost say, have dropped from the sky. They are in the land but not yet an integral part of it. The population product is artificial and exotic. It is as yet unrelated to its physical environment. A human phenomenon unique in the history of the world is the result.

In the description of these conditions, two great difficulties are at once encountered. One is the recency of the phenomenon; the other the paucity of precise physical data. As the first immigration to America on a large scale is scarcely more than half a century old, and in its more startling and violent aspects has lasted only half a generation, time enough has not as yet elapsed to permit a working out of Nature's laws. What evidences have we as to the effect of the new environment upon the transplanted peoples? It is amusing to read in the older

books on ethnology, and even in the files of this learned body, of the undoubted effect of the American climate upon Europeans in tending to produce the black wiry hair, the bronze skin and the aquiline features of the American Indian. Such conclusions are, of course, now understood to be a product, not of climate but of vivid imagination, somewhat over-excited, perhaps, by Buckle's *History of Civilization.* Time is needed, not only to show the effect of the physical environment, but also to demonstrate the laws of inheritance which are certain to emerge from so heterogeneous a mix-up of all the nations of the earth. Almost everything in fact lies in the womb of the future. We must be content at this time, rather to indulge in speculation and prophecy, than to revel in the more positive delights of somatological statistics. This is the field in which a great generalizing intellect like Huxley's would have been at its best.

The second difficulty in the study of racial conditions in the United States is the lack of precise physical data. This may be ascribed in large measure to the overwhelming insistency and importance of other allied concerns. This ethnic phenomenon, tremendous and important as it is for pure science, is for the moment overshadowed by others, social and political. The attention of students is compelled by the urgency of the problems presented by the affairs of men, rather than by their physical persons. Questions of living wages, of overcrowding of population in the great cities, of public health, of moral chaos, of political demoralization, are demanding immediate solution at the hands of science. And then again, in the purely anthropological field, there are the other inviting paths of study afforded by the presence of the negro and the disappearance of the aboriginal Indians. Both of these should be of absorbing interest to specialists, the former unfortunately, much neglected; but the latter, the study of the Indian, of immediate concern because whatever is to be done must be done at once. The day will indeed come when science will awake to the opportunities presented by the ethnic composition of the present white population of the United States; but that day is not yet here. And then, finally, it should be borne in mind by way of excuse for the rather vague and general character of this address, that the United States lacks certain institutions, which have greatly facilitated the anthropological study of Europe. We have no great standing armies to be recruited year by year from all sorts and conditions of men. All military service is voluntary and for hire. The only data of this sort comes to us from the time of the Civil War. Moreover, still another supply of material is rendered difficult of approach by reason of the attitude of our people toward anything savouring of government paternalism. An attempt at a physical census of the school children of New York, like Virchow's great investigation in Germany, would probably lead to a violent outbreak of yellow journalism concerning the property rights of the individual in his offspring—an uproar which might even disturb the courts and the legislatures. Private initiative with the exercise of the greatest tact and diplomacy must alone be relied upon. For instance, a difficult and yet inviting field of study for the physical anthropologist is afforded by our mountaineers in Kentucky and Tennessee. A Simon-pure Anglo-Saxon

stock is here isolated over a large area. Anticipating some years ago a vacation trip into these wilds, I took counsel as to modes of approach for physical measurements upon this rather inflammable human material, wherein blood revenge and the clan feud are still customary. This population has always enjoyed the proud distinction of being the tallest in the United States. By enlisting rivalry in a wholesale contest over the relative tallness of the men of Tennessee or Kentucky, I was told that one might, indeed, hope to fill one's saddle bags with statistics without endangering one's life in the attempt.



[In the figures at the side five "0's" have been omitted: thus 1,3 = 1,300,000.]

IMMIGRATION TO THE UNITED STATES, 1820–1907.

Judged solely from the standpoint of numbers the phenomenon of American immigration is stupendous. We have become so accustomed to it in the United States that we often lose sight of its numerical magnitude. About 25,000,000 people have come to the United States from all over Europe since 1820. This is about equal to the entire population of the United Kingdom only 50 years ago, at the time of our Civil War. It is, again, more than the population of all Italy in the time of Garibaldi. Otherwise stated, this army of men would populate, as it stands to-day, all that most densely settled section of the United States north of Maryland and east of the Great Lakes; all New England, New York, New Jersey, and Pennsylvania in fact. This horde of immigrants has mainly come since the

Irish potato famine of the middle of the last century. The rapid increase year by year is shown by the accompanying diagram. It has taken the form, not of a steady growth but of an intermittent flow. First came the people of the British Isles after the downfall of Napoleon, from 2,000 in 1815 to 35,000 in 1819. Thereafter the numbers are about 75,000 yearly until the Irish famine, when 368,000 immigrants from the British Isles landed in 1852. To the English succeeded the Germans, largely moved at first by the political events of 1848. By 1854, 1,500,000 Teutons, mainly from northern Germany, had settled in America. So many were there, that ambitious plans for the foundation of a German state in the new country were actually set on foot. The later German immigrants were recruited largely from the Rhine Provinces and have settled further to the north-west in Wisconsin and Iowa; the earliest wave having come from northern Germany to Ohio, Indiana, Illinois and Missouri. The Swedes began to come after the Civil War. Their immigration culminated in 1882 with the influx of about 50,000 in that year. More recent still are the Italians, beginning with a modest 20,000 in 1876, rising to over 200,000 arrivals in 1888 and constituting an army of 300,000 in the single year of 1907; and accompanying the Italian, has come the great horde of Slavs, Huns and Jews. Wave has followed wave, each higher than the last; the ebb and flow being dependent upon economic conditions in large measure. It is the last great wave shown by our diagram which has most alarmed us in America. This gathered force on the revival of prosperity about 1897; but it did not assume full measure until 1900. Since that year, over 6,000,000 people have landed on our shores, one quarter of all the total immigration since the beginning. The new-comers of these eight years alone would repopulate all the five older New England states as they stand to-day; or if properly disseminated over the newer parts of the country, they would serve to populate no less than 19 states of the Union as they stand. The new comers of the last eight years could, if suitably seated, elect 38 out of the present 92 Senators of the United States. Do you wonder that thoughtful political students stand somewhat aghast? In the last of these eight years—1907—there were 1,250,000 arrivals; sufficient to entirely populate both New Hampshire and Maine, two of our oldest states with an aggregate territory approximately equal to Ireland and Wales. The arrivals of this one year would found a state with more inhabitants than any 21 of our other existing commonwealths. Fortunately, the commercial depression of 1908 has for the moment put a stop to this inflow. Some considerable emigration back to Europe has in fact ensued. But this can be nothing more than a breathing space. On the resumption of prosperity the tide will rise higher than before. Each immigrant, staying or returning, will influence his friends, his entire village; and so it will be until an economic equilibrium has been finally established between one continent where labour is dearer than land, and the other where land is worth more than labour.

It is not alone the rapid increase in our immigration which merits attention. It is also the radical change in its character, in the source from whence it comes,

Whereas until about 20 years ago our immigrants were drawn from the Anglo-Saxon or Teutonic populations of north-western Europe; they have swarmed over here in rapidly growing proportions since that time from Mediterranean, Slavic and Oriental sources. A quarter of a century ago, two-thirds of our immigration was truly Teutonic or Anglo-Saxon in origin. At the present time less than one-sixth comes from this source. The British Isles, Germany, Scandinavia and Canada unitedly sent us 90 per cent. of our immigrants in the decade to 1870; 82·8 per cent. in 1870–80; 75·6 per cent. in 1880–90; and only 41·8 per cent. in 1890–1900. Since then, the proportion has been very much smaller still. Germany used to contribute one-third of our new-comers. In 1907 it sent barely one-seventh. On the other hand, Russia, Austria-Hungary and Italy, which produced about one per cent. of the total in 1860–70, jointly contributed 50·1 per cent. in 1890–1900. The growth of this contingent is graphically shown by the preceding diagram. I have been at some pains to reclassify the immigration for 1907, in conformity with the racial groupings of the *Races of Europe*, disregarding that is to say, mere linguistic affiliations and dividing on the basis of physical types. The total of about 1,250,000 arrivals was distributed as follows:—

330,000	Mediterranean	Race	... ...	one-quarter.
194,000	Alpine	„	... ...	one-sixth.
330,000	Slavic	„	... ...	one-quarter.
194,000	Teutonic	„	... ...	one-sixth.
146,000	Jewish (mainly Russian)		... ...	one-eighth.

In this year, 330,000 South Italians take the place of the 250,000 Germans who came in 1882 when the Teutonic immigration was at its flood. One and one-half million Italians have come since 1900; over 1,000,000 Russians; and 1,500,000 natives of Austria-Hungary. We have even tapped the political sinks of Europe, and are now drawing large numbers of Greeks, Armenians and Syrians. No people is too mean or lowly to seek an asylum on our shores.

The net result of this immigration has been to produce a congeries of human beings, unparalleled for ethnic diversity anywhere else on the face of the earth. The most complex populations of Europe, such as those of the British Isles, Northern France, or even the Balkan States seem ethnically pure by contrast. In some of these places the soothing hand of time has softened the racial contrasts. Of course, there are certain water holes like Gibraltar, Singapore or Hong Kong to which every type of human animal is attracted; and a notably mongrel population is the result. But for ethnic diversity on a large scale, the United States is certainly unique. Our people have been diverse in origin from the start to a greater degree than is ordinarily supposed. Virginia and New England, to be sure, were for a long time Anglo-Saxon undefiled; but in the other colonies there was much intermixture, such as the German in Pennsylvania, the Swedish along the Delaware, the Dutch in New York, and the Highland Scotch and Huguenot in the Carolinas. Little centres of foreign inoculation in the early days are discoverable everywhere. On a vacation trip recently in the extreme north-eastern

corner of Pennsylvania, my wife and a friend remarked the frequency of French names of persons, and then of villages, of French physical types and of French cookery. On inquiry it turned out that many settlements had been made by French, who emigrated after the battle of Waterloo. Many such colonies could be named, were there time, such as the Dutch along the Lake shore of western Michigan, the Germans in Texas, and the Swiss villages in Wisconsin, none of them recent but constituting long established and permanent elements in the population. Concerning New York city, Father Jognes states that the Director-General told him of 18 languages spoken there in 1644. For the entire thirteen colonies at the time of the Revolution, we have it on good authority that one-fifth of the population could not speak English, and that one-half at least was not Anglo-Saxon by descent. Upon such a stock, it is little wonder that the grafting of these 25,000,000 immigrants should produce an extraordinary human product. For over half a century more than one-seventh of our aggregate population has been of actually foreign birth. This proportion of actual foreigners of all sorts varies greatly as between the different states. In Minnesota and New York, for example, at the present time, the foreign born, as we denote them statistically, constitute about one-quarter of the whole; in Massachusetts, the proportion is about one-third and occasionally, as in North Dakota in 1890, it approaches one-half (42 per cent.). It is in the cities, of course, where this proportion of actual foreigners rises highest. In New York city there are over 2,000,000 people born in Europe who have come there hoping to better their lots in life. Boston has an even higher proportion of actual foreigners; but the relatively larger numbers of English-speaking ones, such as the Irish, renders the phenomenon less striking. Nevertheless, within a few blocks, in the foreign colony, there are no less than 25 distinct nationalities. In this entire district, once the fashionable quarter of Boston, out of 28,000 inhabitants, only 1,500 in 1895 had parents born in the United States.

The full measure of our ethnic diversity is revealed only when one aggregates the actually foreign born with their children born in America—totalizing, as we call it, the foreign born and the native born of foreign parentage. This group thus includes only the first generation of American descent. Oftentimes even the second generation may remain ethnically as undefiled as the first; but our positive statistical data carries us no further. This group of foreign born and their children constitutes to-day upwards of one-third of our total population; and, by excluding the negroes, it equals almost one-half (46 per cent.) of the white population. This is for the country as a whole. Considered by states or cities, the proportion is of course much higher. Baltimore, one of our purest American cities, had 40 per cent. of foreigners with their children in 1900. In Boston the proportion leaps to 70 per cent., in New York to 80 per cent., and reaches a maximum in Milwaukee with 86 per cent. thus constituted. Picture to yourselves if you please, an English city of the size of Edinburgh with only about one, person in eight English by descent, by only a modest two generations! To this condition must be added the probability that not over one-half of that remnant of

a rear guard can trace its descent on American soil as far back as the third generation. Were we to eliminate these foreigners and their children from our city populations, it has been estimated that Chicago, with to-day a population of over 2,000,000, would dwindle to a city of not much over 100,000 inhabitants.

One may select great industries practically given over to foreigners. Over 90 per cent. of the tailors of New York city are Jews, mainly Russian and Polish. In Massachusetts, the centre of our staple cotton manufacture, out of 98,000 employees one finds that only 3,900, or about 4 per cent., are native born Americans, and most of those are of Irish or Scotch-Irish descent two generations back. All of our day labour, once Irish, is now Italian; our fruit vendors once Italian, are now becoming Greek; and our coal mines once manned by peoples from the British Isles are now worked by Hungarians, Poles, Slavaks or Finns. A special study of the linguistic conditions in Chicago well illustrates our racial heterogeneity. Among the people of that great city,—the third in size in the United States,—fourteen languages are spoken by groups of not less than 10,000 persons each. Newspapers are regularly published in ten languages; and church services are conducted in twenty different tongues. Measured by the size of its foreign linguistic colonies, Chicago is the second Bohemian city in the world, the third Swedish, the fourth Polish, and the fifth German (New York being the fourth). I know of one large factory in Chicago employing 4,200 hands, representing 24 distinct nationalities. Rules of the establishment are regularly printed in eight languages. In one block in New York where friends of mine are engaged in college settlement work there are 1,400 people of 20 distinct nationalities. There are more than two-thirds as many native born Irish in Boston as in the capital city, Dublin. With their children, mainly of pure Irish blood, they make Boston indubitably the leading Irish city in the world. New York is a larger Italian city to-day than Rome, having 500,000 Italian colonists. It contains no less than 800,000 Jews, mainly from Russia. Thus it is easily the foremost Jewish city in the world. Pittsburg, the centre of our iron and steel industry is another Tower of Babel. It is said to contain more of that out-of-the-way people, the Servians, than the capital of that country itself.

Such being the ethnic diversity of our population, the primary and fundamental physical question, is as to whether these racial groups are to coalesce to form ultimately a more or less uniform American type; or whether they are to continue their separate existences within the confines of one political unit. Will the progress of time bring about intermixture of these diverse types; or will they remain separate, distinct and perhaps discordant elements for an indefinite period, like the warring nationalities of Austria-Hungary and the Balkan States. We may perhaps best seek an answer, by a serial discussion, first, of those factors which tend to favour intermixture; and thereafter of those forces which operate to prevent it.

The extreme mobility of our American population, ever on the increase, is evidently a solvent force from which powerful results may well be expected in the course of time. This is rendered peculiarly patent by the usual concomitant, that

this mobility is largely confined to the male sex. The census of 1900 showed that nearly one-quarter of our native-born whites were then living in other states than those of their birth. Kansas and Oklahoma are probably the most extreme examples of such colonization. Almost their entire population has been transplanted, often many times, moving by stages from state to state. The last census showed that only 53 per cent. of the population of the former state were natives of Kansas. An analysis of the membership of its state legislature some years ago revealed that only 9 per cent. were born within the confines of the state. Even in the staid commonwealth of Iowa, only about one-third of the American-born population was native to the state. This restlessness has always been characteristic of our original stock. Even our farmers, in other countries more or less yoked to the soil, are still on the move, travelling first westward, and now southward, seeking new outlets for their activities. And from this rural class also is drawn the steady inflow to the great cities and industrial centres, which is so much a feature of our time. Thus has rural New England been depopulated, leaving almost whole counties in which the inhabitants to-day number less than in 1800. In this process during the ten years prior to 1890, the little state of Vermont parted with more than one-half of her population by emigration. Maine sent forth one-third. And other states as far south as Virginia and Ohio, parted with almost as many. It has been estimated even of the city of Boston, an industrial centre of over half-a-million inhabitants, that the old, native-born Bostonians of twenty years ago number less than 64,000. At first our immigrants do not feel the full measure of this restlessness. The great inflowing streams of human beings at New York, Boston and Philadelphia, like rivers reaching the ocean, tend to deposit their sediment at once on touching our shores. At the outset these immigrants are immobile elements, congesting the slums of the great cities. But with the men particularly, with the exception of the Jews perhaps, the end is not there. As among the Italians, Greeks, and Scandinavians, they are apt to return to the fatherland after a while; and then to come back again, this time with a wider appreciation of their opportunities; so that when they return, they scatter far more widely. Instead of bunching near the steamship landing stages, they range afield. With their children this mobility may become even more marked. Cheap railroad fares, the demand for harvest labour in the west, the contract labour on railways and irrigation works, all tend to stimulate this movement. It was this mobility of our older Anglo-Saxon population which kept the nation unified over a vast and highly varied area; and it will be such mobility, engendered by the exigencies of our changing economic life, which will help to stir up and mix together the various ingredients of our population.

A second influence, making for racial intermixture, is the ever-present inequality of the sexes among these foreigners. This is most apparent when they first arrive, about 70 per cent. of them being males. Few nationalities now-a-days bring whole families, as did the Anglo-Saxon and German people a generation ago. The Bohemians, indeed, seem to do so; as well as many of those immigrants practically

driven out from Europe by political persecution. Thus, in 1905, Russia sent 50,000 women folk,—more than came from England, Sweden, and Germany combined; and Austria-Hungary sent 78,000, or thrice the number of women contributed by England, Ireland, and Germany. But of the main body, the large majority are men. This vanguard of males tends generally to be followed by more women later, after an initial period of trial and exploration. Thus, among the Italians the proportion of men to women once six to one, has now fallen to about three to one. Having established themselves in America, what are these men to do for wives? In all classes, matrimony, early or late, is man's natural estate. They may write home or go home and find brides among their own people, or they may seek their wives in America. This probably, the majority of them do; and, of course, most of these naturally prefer to marry within their own colony of fellow countrymen. But suppose, in the first place, this colony is predominantly men, or constitutes a small outpost, isolated among a population alien or semi-alien to them. An odd consequence of the ambition to rise of these foreign-born men, tending inevitably to break down racial barriers, is that they covet an American-born wife. The woman always is the conservative element in society, and tends to cling to the old ways long after they have been discarded by the men. The result is, that in intermixture of various peoples, it is more commonly the man who marries up in the social scale. Being the active agent, he inclines to choose from a social station higher than his own. There were about 15,000,000 people in 1900 born in the United States of foreign-born parents, wholly or in part. About 5,000,000 of these had one parent foreign-born and one native-born; that is to say with one parent drawn from the second generation of the immigrant stream. And in two-thirds of these mixed marriages, it was the father who was foreign-born, the mother being native-born. This law I have verified by many concrete examples and by some additional statistical data. It is the same law, which, contrary to general belief, leads most of the infrequent marriages across the colour line to take the form of a negro husband and a white wife. For certain states, as in Michigan, the registration statistics are reliable, and here again show that over two-thirds of the mixed marriages have foreign-born grooms and native-born brides. At the United Hebrew Charities in New York City, many thousand cases of destitution among foreign-born women arise from the desertion of the wife, with her old-fashioned European ways, by the husband who has out-distanced her in adaptation to the new life. This law is well borne out in the growing intermarriage between the Irish and the Italians. The Irish, from their longer residence in America, are obviously of a higher social grade. The ambitious young Italian fruit vendor or the Jewish merchant who has "made good," being denied a wife among his own people, there being too few to go around, then woos and wins an Hibernian bride. Religion in this instance is no bar, both being Catholics. In a similar fashion, in New England where Germans are scarce and Irish abound, it is the German man who usually marries up into an Irish family. The same thing seems to be true even in New York, where the German colony is very large. When intermarriage between the two people occurs, six times

out of seven it is the Irish woman who bears the children. In this connection, the important *rôle* played in ethnic intermixture by the Irish women deserves mention. One reason is surely her relative abundance. Thus in our Boston foreign colony with every other nationality largely represented by men, there is a surplus of 1,500 Irish females. But a second reason also, is the superior adaptability and comradeship of the Irish woman, together with her democratic ways and lack of spirit of caste. Irish, or Irish-American, womanhood bids fair to be a potent physical mediator between the other peoples of the earth. One may picture this process going further, especially in those parts of the country where the more ambitious native-born males have emigrated to the West or to the large cities. The incoming foreigners, steadily working upward in the economic and social scale, and the stranded, downward trending American families, perhaps themselves of Irish or Scotch-Irish descent, may in time meet on an even plane.

The subtle effects of change of environment, religious, linguistic, political and social is another powerful influence in breaking down ethnic barriers. The spirit of the new surroundings in fact is so different as to prove too powerfully disintegrating an influence. In the moral and religious fields this is plainly noticeable, and often pathetic in its results. The religious bonds are often entirely snapped. This is discernible among the Jews everywhere. As one observer put it to me, "Religion is supplanted by socialism and the yellow journal." Large numbers, notably of the young men, break loose entirely and become agnostics or free-thinkers. The Bohemians are notorious in this regard. This is accompanied by a breakdown of patriarchal authority in the family; and with it, in the close contacts of city life, the barriers of religion against intermarriage visibly weaken. Differences of language are also less powerful dividing influences than one would think, especially in the great cities. One not infrequently hears of bride and groom not being on speaking terms with one another. And one of my friends tells me of a pathetic instance of a Czech-German marriage, in which the man painfully acquired some knowledge of German but in later life forgot it almost entirely; so that in the end the two old people were driven to the use of signs for daily intercourse.

Despite the best efforts of parents to keep alive an acquaintance with the mother tongue, it tends to disappear in the second generation. To be sure at the present time, no less than about one in every sixteen of our entire population, according to the Census of 1900, cannot even speak the English language. Such ignorance of English of course tends more strongly to persist in isolated rural communities. The Pennsylvania Dutch who still after over 200 years of residence in America can say "Ich habe mein Haus ge-*painted* and ge-*whitewashed*" are a case in point. It is averred that in some of the Polish colonies in Texas, even the negroes speak Polish; as Swedish is used in Minnesota and the Dakotas, German in the long-standing Swiss colonies in Wisconsin, and French among the French-Canadians in New England. On Cape Cod in Massachusetts, many rural schools have a separate room for the non-English speaking pupils. But the desire, and

even the economic necessity, of learning English is overwhelming in its potency. In the transitional period of acquiring English, the dependence of the parents upon the children entirely reverses the customary relationship. Even the young children, having learned English in the public schools, are indispensable go-betweens for all intercourse with the public. As a result they relegate the parents to a subordinate position before the world. Census enumerators and college settlement workers agree in citing instances where the old people are commanded to "Shut up," and not interfere in official conversations; or in the familiar admonition "not to speak until spoken to." The decadence of family authority and coherence due to this cause is indubitable. Thus it comes about that already in the second generation the barriers of language and religion against ethnic intermixture are everywhere breaking down. The English tongue readily comes into service; but unfortunately in respect of religion, the traditional props and safeguards are knocked from under, without as yet, in too many instances, suitable substitutes of any sort being provided. From this fact arises the insistence of the problem of criminality among the descendants of our foreign-born. This is a topic of vital importance, but somewhat foreign to the particular subject in hand.

Among the influences tending to hinder ethnic intermixture, there remains to be mentioned the effect of concentration or segregation of the immigrants in compact colonies, which remain to all intents and purposes as truly outposts of the mother civilization as were Carthage, or Treves. This phenomenon of concentration of our foreign-born, not only in the large cities but in the north-eastern quarter of the United States, has become increasingly noticeable with the descending scale of nationality among the more recent immigrants. The Teutonic peoples have scattered widely, taking up land in the West and thus populating the wilderness But the Mediterranean, Slavic and Oriental people heap up in the great cities; and with the exception of Chicago, seldom penetrate far inland. Literally four-fifths of all our foreign-born citizens now abide in the twelve principal cities of the country, and these are mainly in the East. We thought it a menace that in 1890, 40 per cent. of our immigrants were to be found in the North Atlantic states; but in the decade to 1900, four-fifths of the new-comers settled there; the result being that in the latter year, not 40 but actually 80 per cent. of the foreign-born of the United States resided in this already densely populated area. Four-fifths of the foreign-born of New York State, and two-thirds of those in Illinois are now packed into the large towns. To be sure this phenomenon of urban congestion is not confined to the foreigner. Within a 19-mile radius of the City Hall in New York, dwells 51 per cent. of the population of the great state of New York together with 58 per cent. of the population of the adjoining state of New Jersey. But its results are more serious among the foreign-born, heaped up as they are in the slums and purlieus. On the other hand, in the middle and far West, the proportion of actual foreign-born has been steadily declining since 1890. Cities like Cincinnati or Milwaukee, once largely German, have now become Americanized. In the second and third generations, not recruited as actively as before by constant

arrivals, the parent stock has become visibly diluted. And in the rural north-west, as the older Scandinavians die off, their places are being supplied by their American-born descendants; but with admixture of raw recruits from the old countries to a lesser degree than before.

This phenomenon of concentration obviously tends to perpetuate the survival of racial stocks in purity. In a dense colony of 10,000 or 50,000 Italians or Russian Jews, there need be little contact with other nationalities. The English language may intrude and the old-established religion may lose its potency; but as far as physical contacts are concerned, the colony may be self-sufficient. Professor Buck found in the Czech colony in Chicago that while 48,000 children had both parents Bohemian, there were only 799 who had only one parent of that nationality. Had there been only a small colony, the number of mixed marriages would have greatly increased. Thus the Irish in New York, according to the Census of 1885, almost overwhelmingly took Irish brides to wife; but in Baltimore at the same time, where the Irish colony was small, about one in eight married native-born wives. Such facts illustrate the force of the influences to be overcome in the process of racial intermixture. Call it what you please, "consciousness of kind," or "race instinct," there will always be, as among animals, a disposition of distinct types to keep separate and apart. Among men, however, this seldom assumes concrete form in respect of physical type; although in *The Races of Europe* I have sought to demonstrate its results among the Basques and the Jews. Marriage elsewhere appears to be rather a matter of social concern. There is no physical antipathy between different peoples. Oftentimes the attraction of a contrasted physical type is freely acknowledged. The barrier to intermarriage between ethnic groups is more often based upon differences in economic status. The Italian "Dago" is looked down upon by the Irish; as in turn the Irishman used to be characterized by the Americans as a "Mick," or a "Paddy." Any such social distinctions constitute serious handicaps in the matrimonial race; but on the other hand, as they are in consequence largely artificial, they tend to disappear with the demonstration of economic and social efficiency.

Heretofore, our attention has been directed to a discussion of the influences making for or against a physical merger of these divers peoples. It may now be proper to inquire how much of this intermixture there really is. Does it afford evidence of tendencies at work, which may in time achieve momentous results? The first cursory view of the field would lead one to deny that the phenomenon was yet of importance. The potency of the forces tending to restrict intermarriage seems too great. But on the other hand, from such concrete statistical data as are obtainable, it appears as if a fair beginning had already been made, considering the recency of the phenomenon. The general data from the Federal Census are valueless in this connection. Although they indicate much intermarriage of the foreign-born with the native-born of foreign parentage, the overwhelming preponderance of this is, of course, confined to the same ethnic group. The immigrant Russian Jew, or young Italian, is merely mating with another of the same people, born in America

of parents who were direct immigrants. The bride in such a case is as truly Jewish or Italian by blood as the groom, although her social status and economic condition may be appreciably higher. But evidence of true intermixture across ethnic lines is not entirely lacking. No less than 56,000 persons are enumerated in the Federal Census as being of mixed Irish and German parentage, for example; and of these, 13,400 were from New York State alone. German-English intermarriages are about as frequent, numbering 47,600. Irish and French-Canadian marriages numbered 12,300, according to the same authority. Three times out of five, it is the French-Canadian man who aspires to an Irish bride. In the north-west the Irish and Swedes are said to be evincing a growing fondness for one another. For the newer nationalities, the numbers are, of course, smaller.

Some idea of the prevalence of mixed marriages is afforded by the specialized census data of 1900. Take one nationality, the Italians for example. There were 484,207, in all, in the United States. Of these nearly one-half or 218,810 had both parents Italian. Marriages of Italian mothers and American-born fathers produced 2,747; while, conformably to the law already set forth, no less than 23,076, had Italian fathers and native-born mothers. There still remained 12,523 with Italian fathers and mothers of some other non-American nationality, and 3,911 with Italian mothers and fathers neither American or Italian born. Thus of the 484,000 Italian contingent, nearly one-tenth proved to be of mixed descent. For the City of Boston, special inquiry showed that 236 Italians in a colony of 7,900 were of mixed parentage, with predominantly Irish tendencies.

Mixed marriages are, of course, relatively infrequent; but at all events, as in these cases, constitute a beginning. Sometimes they occur oftener, especially in the great centres of population where all are herded together in close order. Thus in a census made in New York of the oldest part of the city south of Wall and Pine Streets to the Battery by the Federation of Churches, out of 307 families completely canvassed, it appeared that 49 were characterized by mixed marriages. This proportion of one in six is certainly too high for an average; but it is nearly equalled by the rather unreliable data afforded by the mortality statistics of Old New York for 1906, showing the parentage of descendants. This gave a proportion of one to eight as of mixed descent. How many of those called mixed were only offspring of unions of first and second generations of the same people is not, however, made clear. Some good authorities, such as Dr. Maurice Fischberg, do not hesitate to affirm that even for the Jews, as a people, there is far more intermarriage with the Gentile population, than is commonly supposed. In Boston, the most frequent form of intermarriage perhaps is between the Jewish men and Irish or Irish-American women.

A few general observations upon the subject of racial intermixture may now be permitted. Is the result likely to be a superior or an inferior type? Will the future American two hundred years hence, be better or worse, as a physical being, because of his mongrel origin? The greatest confusion of thinking is permitted upon this topic. Evidence to support both sides of the argument is to be had for the seeking.

For the continent of Europe, it is indubitable that the highly mixed populations of the British Isles, of Northern France, of the valley of the Po and of southern Germany, are superior in many ways to those of outlying or inaccessible regions where greater purity of type prevails. But the mere statement of these facts carries proof of the partial weakness of the reasoning. Why should not the people of the British Isles, the Isle de France and of the Po valley be the best in Europe? Have they not enjoyed every advantage which a salubrity of climate and fertility of soil can afford? Was it not, indeed, the very existence of these advantages which rendered these garden spots of the earth, Meccas of pilgrimage? Viewed in a still larger way, is it not indeed the very beneficence of Nature in these regards, which has induced or permitted a higher evolution of the human species in Europe, than in any of the other continents. The races certainly began even. Why are the results for Europe as a whole so superior to-day? Alfred Russel Wallace, I am sure, would have been ready with a cogent reason. What right have we to dissociate these concomitantly operative influences of race and environment, and ascribe the superiority of physical type to the effect of intermixture alone? Yet on the other hand, does not the whole evolutionary hypothesis compel us to accept some such favourable conclusion? What leads to the survival of the fittest, unless there be the opportunity for variation of type, from which effective choice may result. And yet most students of biology agree, I take it, in the belief that the crossing of types must not be too violently extreme. Nature proceeds in her work by short and easy stages. At this point, the opportunity for the students of heredity like Galton, Pearson and their fellow workers appears. What, for instance, is the order of transmission of physical traits as between the two parents in any union? We have seen how unevenly assorted much of the intermixture in the United States tends to be. If as between the Irish and the Italians who are palpably evincing a tendency to mate together, it is commonly the Italian male who seeks the Irish wife; and if, as Pearson avers, inheritance in a line through the same sex is pre-potent over inheritance from the other sex; what interesting possibilities of hereditary physical differences may result.

An interesting query suggested by the results of scientific breeding and the study of inheritance among lower forms of animal life is this; what chance is there that out of this forcible dislocation and abnormal intermixture of all the peoples of the civilized world, there may emerge a physical type tending to revert to an ancestral one, older than any of the present European varieties? The law seems to be well supported elsewhere, that crossing between highly evolved varieties or types, tends to cause reversion to the original stock; and the greater the divergence between the crossed varieties, the more powerful does the reversionary tendency become. Most of us are familiar with the illustrations; such as the reversion among sheep to the primary dark type; and the emergence of the old wild blue-rock pigeon from blending of the fan-tail and pouter varieties. The same law is borne out in the vegetable world, the facts being well known to fruit growers and horticulturists. The more recently acquired character-

istics, especially those which are less fundamentally useful, are sloughed off; and the ancestral features, common to all varieties, emerge from dormancy into prominence. Issue need not be raised, as set forth by Dr. G. A. Reid, whether the result of cross-breeding is always in favour of reversion, and never of progression; but interesting possibilities linked up with this law may be suggested. All students of natural science have accepted the primary and proven tenets of the evolutionary hypothesis—or rather let us say, of the law of evolution. And all alike acknowledge the subjection of the human species to the operation of the same great laws applicable to all other forms of life. It would have been profoundly suggestive to have heard from Huxley on a theme like this. We are familiar in certain isolated spots in Europe, the Dordogne in France for example, with the persistence of certain physical types without change from prehistoric times. The modern peasant is the proven direct descendant of the man of the stone age and the mammoth. But here is another mode of access to that primitive type, or even an older, running back to a time before the separation of European varieties of men began. Thus, to be more specific, there can be little doubt that the primitive type of European was brunette, probably with black eyes and hair and a swarthy skin. Teutonic blondness is certainly an acquired trait, not very recent judged by historic standards, to be sure, but as certainly not old, measured by evolutionary time. What chance is there that in the unions of rufous Irish and dark Italian types, a reversion in favour of brunetteness may result. Were it not for the inflammatory character of the controversy in a gathering of anthropologists, over the relative primitiveness of the dolichocephalic and brachycephalic types in Europe, I might be tempted to go further and speculate as to the bearing of American racial intermixture upon this much-mooted question.

A relatively unimportant, yet theoretically very interesting, detail of the subject of racial intermixture is suggested in Westermarck's brilliant *History of Human Marriage*. It is a well-known statistical law, almost the world over, that there are more boys than girls born into the world. The normal ratio of births is about 105 males to 100 females. Students have long sought the reasons for this irregularity; but nothing has yet been proven conclusively. Westermarck brings together much evidence to show that this proportion of the sexes at birth is affected by the amount of in-breeding in any social group, crossing of different stocks tending to increase the percentage of female births. Thus, among the French half-breeds and mulattos in America, among mixed Jewish marriages, and in South and Central America, female births may at times even overset the difference and actually preponderate over the male births. The interest of this topic lies in the fact that it is unique among social phenomena in being, so far as we know, independent of the human will. It is the expression of what may truly be denominated natural law. Westermarck's general biological reasoning is that inasmuch as the rate of increase of any animal community is dependent upon the number of productive females, a sort of accommodation takes place in each case between the potential rate of increase of the group and its means of subsistence,

or chance of survival. More females birth at is the response of Nature to an increasingly favourable environment, or condition. In-and-in-breeding is undoubtedly injurious to the welfare of any species. As such, according to Westermarck, it is accompanied by a decline in the proportion of females born. This is the expression of Nature's disapproval of the practice; while intermixture tends, contrariwise, to produce a relative increase of the female sex. Certain it is that an imposing array of evidence can be marshalled to give colour to the hypothesis. My suggestion at this point is that, here in the racial intermixture just now beginning in the United States, and sure to assume tremendous proportions in the course of time, will be afforded an opportunity to study man in his relation to a great natural law, in a way never before rendered possible. Statistical material is at present too meagre, and vague; but one may confidently look forward to such an improvement in this regard, that an inviting field of research will be exposed to view.

The significance of the rapidly increasing immigration from Europe in recent years, is vastly enhanced by other influences in the United States. A powerful process of social selection is apparently at work among us. Racial heterogeneity, due to the direct influx of foreigners in large numbers, is aggravated by their relatively high rate of reproduction after arrival; and in many instances by their surprisingly sustained tenacity of life, greatly exceeding that of the native-born American. Relative submergence of the domestic Anglo-Saxon stock is strongly indicated for the future. "Race suicide," marked by a low and declining birth rate, as is well known, is a world-wide social phenomenon of the present day. Nor is it by any means confined solely to the so-called upper classes. It is so notably a characteristic of democratic communities, that it may be regarded as almost a direct concomitant of equality of opportunity among men. To this tendency, the United States is no exception; in fact, together with the Australian commonwealths, it affords one of the most striking illustrations of present-day social forces. Owing to the absence of reliable data, it is impossible to state what the actual birthrate of the United States as a whole may be. But for certain commonwealths the statistical information is ample and accurate. From this evidence it appears that, for those communities at least to which the European immigrant resorts in largest numbers, the birth rate is almost the lowest in the world. France and Ireland, alone among the great nations of the earth, stand lower in the scale. This relativity is shown by the following table, giving the number of births in each case per thousand of population:—

	Birth Rate (approximate).
Hungary	40
Austria	37
Germany	36
Italy	35
Holland	33

England; Scotland; Norway; Denmark	30
Australia; Sweden	27
Massachusetts; Michigan	25
Connecticut; Rhode Island	24
Ireland	23
France	22
New Hampshire	20 (?)

This crude birth rate, of course, is subject to several technical corrections; and should not be taken at its full face value. Moreover, it may be unfair to generalize for the entire rural West and South, from the data for densely populated communities. And yet, as has been observed, it is in our thickly settled eastern states that the newer type of immigrant tends to settle. Consequently, it is the birth rate in these states, as compared with that of the new comer, upon which racial survival will ultimately depend.

The birth rate in the United States in the days of its Anglo-Saxon youth was one of the highest in the world. The best of authority traces the beginning of its decline to the first appearance, about 1850, of immigration on a large scale. Our great philosopher, Benjamin Franklin, estimated six children to a normal American family in his day. The average at the present time is slightly above two. For 1900, it is calculated that there are only about three-fourths as many children to potential mothers in America as there were forty years ago. For Massachusetts, were the old rate of the middle of the century sustained, there would be 15,000 more births yearly than now occur. In the course of a century the proportion of our entire population, consisting of children under the age of ten, has fallen from one-third to one-quarter. This, for the whole United States, is equivalent to the loss of about 7,000,000 children. So alarming has this phenomenon of the falling birth rate become in the Australian colonies, that in New South Wales a special governmental commission has voluminously reported upon the subject. It is estimated that there has been a decline of about one-third in the fruitfulness of the people in 15 years. New Zealand even complains of the lack of children to fill her schools. The facts concerning the stagnation, nay even the retrogression, of the population of France, are too well known to need description. But in these other countries, the problem is relatively simple, as compared with our own. Their populations are homogeneous, and, ethnically at least, are all subject to these social tendencies to the same degree. With us, the danger lies in the fact that this low and declining birth rate is primarily confined to the Anglo-Saxon contingent. The immigrant European horde, until recently at least, has continued to reproduce upon our soil with well sustained energy.

Baldly stated, the birth rate among the foreign-born in Massachusetts is about three times that of the native-born. Childless marriages are one-third less frequent. This somewhat exaggerates the contrast, because of differing conditions as to age and sex in the two classes. The difference, nevertheless, is very great. Kuczynski

has made detailed investigations as to the relative fecundity of different racial groups. The fruitfulness of English-Canadian women in Massachusetts is twice that of the Massachusetts-born; of the Germans and Scandinavians it is two-and-a-half times as great; of the French-Canadians it is thrice; and of the Portuguese four times. Even among the Irish, who are characterized now-a-days everywhere by a low birth rate, the fruitfulness of the women is fifty per cent. greater than for the Massachusetts native-born. The reasons for this relatively low fecundity of the domestic stock are, of course, much the same as in Australia and in France. But with us, it is as well the "poor white" among the New England hills or in the southern states as the town dweller, who appears content with few children or none. The foreign immigrant marries early and children continue to come until much later in life than among the native-born. It may make all the difference between an increasing or declining population whether the average age of marriage is 20 years or 29 years. The contrast between the Anglo-Saxon stock and its rivals for supremacy may be stated in another way. Whereas only about one-ninth of the married women among the French-Canadians, Irish and Germans are childless; the proportion among the American-born and the English-Canadians is as high as one in five. A century ago about two per cent. of barren marriages was the rule. Is it any wonder that serious students contemplate the racial future of Anglo-Saxon America with some concern? They have witnessed the passing of the American Indian and the buffalo. And now they query as to how long the Anglo-Saxon may be able to survive.

On the other hand, evidence is not lacking to show that in the second generation of these immigrant peoples, a sharp and considerable, nay, in some cases, a truly alarming decrease in fruitfulness occurs. The crucial time among all our new comers from Europe has always been this second generation. The old customary ties and usages have been abruptly sundered; and new associations, restraints and responsibilities have not yet been formed. Particularly is this true of the forces of family discipline and religion, as has already been observed. Until the coming of the Hun, the Italian and the Slav, at least, it has been among the second generation of foreigners in America, rather than among the raw immigrants, that criminality has been most prevalent. And it is now becoming evident that it is this second generation in which the influence of democracy and of novel opportunity makes itself apparent in the sharp decline of fecundity. In some communities, the Irish-Americans have a lower birth rate even than the native-born. Dr. Engelmann on the basis of a large practice has shown that among the St. Louis Germans, the proportion of barren marriages is almost unprecedentedly high. Corroborative, although technically inconclusive, evidence from the Registration Reports of the State of Michigan appears in the following suggestive table showing the nativity of parents and the number of children per marriage annually in each class.

German father; American-born mother	...	2·5 children.
American-born father, German mother	...	2·3 „
German father, German mother ...	...	6· „
American-born father, American-born mother		1·8 „

I have been at some pains to secure personal information concerning the foreign colonies in some of our large cities, notably New York. Dr. Maurice Fishberg for the Jews, and Dr. Antonio Stella for the Italians, both notable authorities, confirm the foregoing statements. Among the Italians particularly, the conditions are positively alarming. Peculiar social conditions influencing the birth rate, and the terrific mortality induced by overcrowding, insanitation and the unaccustomed rigors of the climate, make it doubtful whether the Italian colony in New York will even be physically self-sustaining. Thus it appears that forces are at work which may check the relatively higher rate of reproduction of the immigrants, and perhaps reduce it more nearly to the Anglo-Saxon level.

The vitality of these immigrants is surprisingly high in some instances; particularly where they attain an open-air rural life. The birth rate stands high; and the mortality remains low. Such are the ideal conditions for rapid reproduction of the species. On the other hand, where overcrowded in the slums of great cities, ignorant and poverty-stricken, the infant mortality is very high, largely offsetting, it may be, the high birth rate. The mortality rate among the Italians in New York, for instance, is said to be twice as high as in Italy. Yet some of these immigrants, such as the Scandinavians, are peculiarly hardy and enduring. Perhaps the most striking instance is that of the Jews, both Russian and Polish. According to the Census of 1890, their death rate was only one-half that of the native-born American. For three of the most crowded wards in New York City, the death rate of the Irish was 36 per 1,000; for the Germans, 22; for natives of the United States, 45; while for the Jews it was only 17 per 1,000. By actuarial computation, at these relative rates, starting at birth with two groups of 1,000 Jews and Americans respectively, the chances would be that the first half of the Americans would die within 47 years; while for the Jews this would not occur until the lapse of 71 years. Social selection at that rate would be bound to produce very positive results in a century or two.

At the outset, confession was made that it was too early as yet to draw positive conclusions as to the probable outcome of this great ethnic struggle for dominance and survival. The great heat and sweat of it is yet to come. Wherever the Anglo-Saxon has fared forth into new lands, his supremacy in his chosen field, whatever that may be, has been manfully upheld. India was never contemplated as a centre for settlement; but Anglo-Saxon law, order and civilization has prevailed. In Australia, where Nature has offered inducements for actual colonization, the Anglo-Saxon line is apparently assured of physical ascendancy. But the great domain of Canada—greater than one can conceive who has not traversed its north-western empire—is subject to the same physical danger which confronts us in the United States—actual physical submergence of the

English stock by a flood of continental European peoples. And yet, after all, is the word "danger" well considered for use in this connection? What are the English people, after all, but a highly evolved product of racial blending? To be sure, all the later crosses, the Saxons, Danes and Normans, have been of allied Teutonic origin at least. Yet encompassing these racial phenomena with the wide, sweeping vision of him in whose honour this address is rendered, dare we deny an ultimate unity of origin to all the peoples of Europe? Our feeble attempts at ethnic analysis cannot at the best reach further back than to secondary origins. And the primary physical brotherhood of all branches of the white race, nay, I will go even farther, and say of all the races of men, must be admitted on faith—not on the faith of dogma, but on the faith of scientific probability. It is only in their degree of physical and mental evolution that the races of men are different. You have your "white man's burden" to bear in India; we have ours to bear with the American negro and the Filipinos. But an even greater responsibility with us and with your Canadian fellow-citizens is that of the "Anglo-Saxon's burden":—to so nourish, uplift and inspire all these immigrant peoples of Europe, that in due course of time, even if the physical stock be inundated by the engulfing flood, the torch of Anglo-Saxon civilization and ideals, borne by our fathers from England to America, shall yet burn as bright and clear in the New World, as your fires have continued to illuminate the Old.

THE ORIGIN OF THE TURKISH CRESCENT.[1]

By Professor William Ridgeway, M.A., Sc.D., F.B.A., Litt.D., LL.D.

[With Plates XIX–XXV.]

There is no more familiar antithesis than that between the crescent and the Cross, which is ever recurring in books about the Crusades. There is also a very widespread vague belief that the crescent is a survival in Islam from the days of the Ignorance when the Moon Goddess under her various names of Ishtar, Astarte, Alilat, or Mylitta was worshipped over a large part of south-western Asia. Yet when we come to examine into the history of the crescent as a badge of Muhammadanism, we are confronted by the fact that it was not employed by the Arabs or any of the first peoples who embraced the faith of the Prophet, and that to speak of the crescent as a symbol borne by the Saracens who fought in the Crusades against Richard Cœur-de-Lion or Saint Louis is to be guilty of a dreadful anachronism. The truth is that the crescent was not identified with Islam until after the appearance of the Osmanli Turks, whilst on the other hand there is the clearest evidence that in the time of the Crusades and long before, the crescent and star were a regular badge of Byzantium and the Byzantine Emperors, some of whom placed it on their coins. It is held by some that the Osmanli Turks adopted the crescent and star from Byzantium after their occupation of Northern Asia Minor, whilst others hold that they did not employ it until after the capture of Constantinople in 1453. Moreover there is evidence that a crescent with a star or stars is far older than the Byzantine empire in the Ægean world. I here show (Fig. 1) a gem of the third century A.D. on the back of which appears a crescent with three stars. But the emperors of the East appear to have taken over a badge which is seen on the bronze coins of Byzantium in Roman times from the first century B.C. (Fig. 2). The reverse shows a crescent and star, which according to Hesychius alluded to the appearance of a miraculous light, which during a night attack by Macedonians revealed the assailants to the besieged.[2] The absence of such a badge on the banners of the Arabs who first carried the religion of Muhammad in every direction makes it clear that the badge did not originate in any survival of moon worship. We must therefore look for some other explanation of this famous device, which along with the horse-tail seems to have formed the banner of the Osmanli Turk when he took up his abode on the Golden Horn.

[1] The nucleus of this paper was given as a note to section H of the British Association at Leicester in 1907.

[2] Head, *Hist. Num.*, p. 231.

At the Southport meeting of the British Association I maintained the thesis that jewellery and ornament originated not in æsthetic but in Magic,[1] a doctrine which I repeated in a more expanded form before the Royal Anthropological Institute in the following year (1904). In my classification of the various objects used as amulets and consequently as ornaments, one of my categories comprises the tusks and claws of fierce and powerful animals. I illustrated this doctrine by the use of lion's claws as amulets all over Africa from Somaliland to the Cape, the use of tiger's claws in India, of leopard's claws in various parts of the world, and the very widespread use of boar's tusks, as for example the well-known boar's tusk ornaments of New Guinea (Figs. 3 and 4). At that time I could only conjecture from analogy that the natives of New Guinea used the boar's tusks for amuletic rather than for decorative reasons, for although like the ratti seeds, known as "crabs' eyes," they are commonly worn, travellers and even scientific explorers had with one accord assumed that they are used for purely æsthetic reasons. Shortly after that, Mr. Holmes in his excellent paper[2] stated from his own positive knowledge that the boar's tusk is worn for amuletic purposes by the natives of New Guinea. In the New Guinea charms both the single tusk is employed and also two tusks joined together, forming practically a circle (Fig. 4). It is highly probable that the pendants composed of two boar's tusks (Fig. 5)[3] worn by the Nagas of Assam are also used for prophylactic rather than for merely ornamental reasons, but of this I have as yet no proof. In the double lion's claw and double leopard's claw amulet of Uganda and East Africa we have a crescent formed by two claws. A fine example of this (leopard's claw) charm, for which I am indebted to my friend, the Rev. J. Roscoe, C.M.S., the well known authority on Uganda, I here figure (Fig. 6). Yet there is no more reason for supposing that this shape of amulet is due to Arab influence than is the New Guinea double tusk breast pendant.

Later on I obtained from Smyrna, through my friend and former pupil, Mr. A. J. B. Wace, Fellow of Pembroke College, the common horse amulet used by the Turks in Asia Minor. Since then I have procured another specimen (Fig. 7) also from Smyrna. It is composed of a splendid pair of boar's tusks joined together by a band of silver garnished with a sham turquoise in the middle and with two other pastes, one on either side. In the centre hangs a large flat metal pendant, semicircular above, its upper edge being plainly the survival of a pair of tusks, as will be seen by comparison with Fig. 15; the lower portion of the pendant ends in an apex, from the sides and extremity of which depend a number of small metal discs with holes in the middle. These I can prove to be the descendants of cowries still commonly worn attached to such pendants in Egypt, Greece (*infra* p. 248) and other parts of South-Eastern Europe. Besides these discs there are also, attached to the pendant, flat claw-shaped objects, which again can be shown to

[1] *Report of British Association*, 1903, p. 815.

[2] *Journ. Anthrop. Inst.*, vol. xxxiii (1903), pp. 125–134.

[3] The illustration is from a necklace with pendant in the British Museum (presented by Sir A. W. Franks in 1871).

represent leopard's or lion's claws similarly used as amuletic pendants in various parts of the Mediterranean. In the middle of the large pendant is a green paste. The whole amulet is suspended by a string of large opaque blue beads doubtless imitating turquoise.

The question now arises: Is this use of the boar's tusks in these crescent amulets or ornaments merely a freak of some particular manufacturer, who thus adapted two tusks of the unclean beast to form the Turkish crescent? This doubt can be at once set at rest. It is certainly no freak of very recent date for such ornaments were in full general official use amongst the Turks in their palmy days of conquest. My friend and former pupil, Mr. F. W. Hasluck, Fellow of King's College, Cambridge, writes to me that he has recently seen at Vienna "amongst the trophies of the Turkish siege (1685), some fine examples of the tusk ornament," including not only the crescent-shaped pendant, but also "the fourfold standard ornament." All such horse ornaments are commonly made of boar's tusks in Asia Minor, and those formed of boar's tusks are much more prized than those in other materials, and there is good evidence that the virtue of such amulets lies in the tusk itself and not merely in the crescent shape.

Mr. F. W. Hasluck, who has been indefatigable in procuring me specimens and other evidence, bought at Broussa a double tusk ornament practically identical with that here shown (Fig. 7). When making a voyage in a caïque one of his boatmen being seized with toothache and having seen the tusk ornament in Mr. Hasluck's possession, begged for a loan of it to apply to his jaw on the ground that it was a most excellent remedy for toothache. There can be little doubt that we have here a case of sympathetic magic, the powerful boar's tooth being supposed to be potent in curing pain in the teeth. This is completely confirmed by another crescent (Fig. 8). It was bought for me in Chios by Mr. Hasluck. It is composed of a fine pair of boar's tusks, but the tusks, however, are completely concealed from a front view by an elaborate work of fine beads strung on wire. Now, unless there was some particular virtue ascribed to the tusks, there is no reason why anyone who wished to make a mere crescent ornament should not have used some much cheaper material than a pair of tusks for a foundation for the bead-work. Further confirmation is gained from the fact that crescent ornaments often show themselves to be plainly imitated from boar's tusks.

I show (Fig. 9) an imitation in ivory of a pair of boar's tusks bought for me by Mr. Hasluck at Eskishehr. In Fig. 29 I show a double-tusk ornament from Smyrna in metal, in which there can be no doubt that the crescent is derived, as is shown by its cross-section, from a prototype made of a boar's tusk. Unless the boar's tusk was the more primitive and more prized form as that which had in it the real virtue, there was no reason why a similar crescent ornament made in metal should thus slavishly preserve the tusk model.

We now not unnaturally ask ourselves, whether after all, the boar's tusk crescent may not be far older, not only than Muhammadanism, but even

Christianity. Then arise the further questions:—Did the Osmanli Turks bring it with them? Did they find it already in the lands around the Ægean? or, did they both bring it with them and also find it already in the lands which they conquered? If it should turn out that it was in the Balkan and in the Ægean long before the Turk or the Christian, then we may believe that it is a survival from far-off pagan days, when it was used as it and similar tusks and claws are to-day in New Guinea, in Africa and many other parts of the world.

It will of course be said that Turkish influence may naturally have diffused over a wide area the use of the crescent. But if we can find a region of which the Turks never were masters and where the people, though still Christians, yet use the boar's tusk amulet, there will certainly be *prima facie* evidence that these Christians have not borrowed the amulet from the Turks.

In Fig. 10 I show a fine double tusk horse ornament which was in the loan exhibition of Montenegrin jewellery in the Balkan States Exhibition at Earl's Court in the year 1907. Through the kindness of Miss M. E. Durham, the well-known authority on Balkan lands, I am enabled to figure this fine specimen. Though it belongs to a Montenegrin gentleman, Miss Durham tells me that this particular example is probably of Albanian workmanship. This was confirmed by an Albanian Latin Catholic who informed Miss Durham that such amulets were in general use amongst his people for their horses. I give his statement in his own words as taken down by Miss Durham. In the same case with the specimen here figured was a broken double boar's tusk ornament from Servia very similar to that from Smyrna (Fig. 7). The Albanian, pointing to this broken boar's tusk ornament, said to Miss Durham:

"You know what he is? Pig's tooth. Ah, but what he for?" "What?" asked I. "Hang round horse's neck. Very good. You know why?" She replied, "No." He answered, "Keep off bad eye from horse. Now, I had one big one like that" (indicating the one here shown in Fig. 10). "Oh, he very good! I have one most beautiful horse. Oh, what finest horse! I put that fing (thing) on his neck. He never have no bad. It keep him all right. Everyone say, what beautiful horse!" "Turkish thing, isn't it?" said Miss Durham. "No! No! No! Albanian fing, quite Albanian. Very good fing. When I in my country always on my horse." This evidence coming from a Latin Catholic Albanian gives a strong presumption that the boar's tusk amulet is primitive in the Balkan and not merely copied from the Turks, whose hated symbol it is most unlikely the Albanians and Montenegrins would use to keep off the evil eye. In Fig. 11 I am enabled to show a genuine Albanian specimen obtained for me this winter (1908) by Miss Durham at Prizren. She adds that "sometimes two such crescents are worn one above the other," a fact which explains the metal survivals in the pendants of Figs. 7 and 16. But we can substantiate our case still better. In Italy single boar's tusks are amongst the most common amulets worn, as are leopard's claws and teeth.

I here show (Fig. 12) such a boar's tusk amulet used in Rome. Now, as this

is a single tusk and not a crescent, there can be no doubt of its being simply a survival from ancient times.

The modern Italian attaches a piece of badger's skin and a claw or tooth to his child to keep off ill luck and also to his horse for the like purpose; the ancient Italian attached to his child a wolf's tooth to keep it from being frightened and also a piece of wolf's skin, whilst he believed that wolves' teeth placed on his horse gave him great powers of endurance.[1] Doubtless the tooth of the fierce and untiring wolf, the favourite beast of Mars, gave courage to the child and endurance to the steed. Though I cannot show a wolf's tooth charm from Italy, I here figure (Fig. 13) a wolf's fang amulet obtained for me at Prishtina in Albania by Miss Durham, who bought it from a Vlah in 1908. Moreover, I am informed by Mr. A. J. B. Wace that he has seen double boar's tusk ornaments on horses in Italy. But as the single tusk is so common, there can be little doubt that the double tusk used by the Italians is of native origin and not borrowed from the Turk. It is thus highly probable that the Albanian double boar's tusk ornament is quite indigenous, and this view is likewise confirmed by the fact that it has no pendant, either star-shaped or otherwise, nor is it set with a turquoise, a stone which may be regarded as a Turkish addition. But of this more anon.

My friend Dr. A. J. Evans tells me that he has a double boar's tusk horse ornament which he obtained in Bosnia. We have just seen that in Servia ornaments similar to that from Smyrna (Fig. 7) are used, though it might be surmised that this was the result of Turkish conquest. Yet when we find a miniature double boar's tusk ornament on a string of apparently indigenous amulets comprising amongst them a crucifix, we naturally pause to consider whether, after all, the double boar's tusk is not primitive here, just as in Italy and Albania. The string of amulets here shown (Fig. 14), obtained through the good offices of Miss Durham, is worn coiled round the cap in the district of Nish in middle Servia. Furthermore objects of a similar form in metal are known amongst the prehistoric antiquities of the Danubian region, as for example one figured by Hoernes,[2] whilst in the Museum at Belgrade are some of these ornaments in gold (Fig. 15),[3] to which my attention was called by my friend and former pupil, Mr. W. J. Farrell, Fellow of Jesus College.

The reader will now be convinced that the crescent amulet has been in Danubian lands from before the dawn of history.

Let us pass to Palestine. I here show (Figs. 16 and 17) two specimens procured for me by my friend, Mr. R. A. S. Macalister, Director of the excavations of the Palestine Exploration Fund. Both examples are from Jaffa. The first is perfectly plain without any pendant, the tusks being simply joined together by a band of silver, as in the Albanian example, though in this case without any ornament. The other has a pendant formed of a crescent plainly repeating in metal the double

[1] Pliny, *H.N.*, xxviii, 19, 78; cf. Ridgeway, *Origin and Influence of the Thoroughbred Horse*, p. 505.

[2] *Urgeschichte der Bildenden kunst in Europa* (Vienna, 1898).

[3] I am indebted for this photograph (through Mr. W. J. Farrell) to the kindness of M. Milan Mitić of the Belgrade Museum.

boar's tusk and containing a star of ten points. We have already seen, though not so well defined, in the pendant of the Smyrna specimen (Fig. 7), a crescent in metal repeating the double boar's tusk motive. Here then though the star is found as a pendant, yet the main element even in the pendant itself is the repetition in metal of the double boar's tusk. Mr. Macalister writes to me that "these ornaments are hung on horses to keep off the evil eye. They are sold at a very high price. They sometimes run up to twenty francs or so. So they are a valuable prophylactic. Moreover, I dig up boar's tusks here (Gezer) in the works, and also pendant silver crescents, which seem to be a representation of just such amulets. I saw in the *Athenæum* your theory. If ever you come here keep the idea to yourself. You would certainly be murdered if it got about that you believed that a reminiscence of the unclean beast dominated every mosque in Islam."

Once more will the reader be convinced by the occurrence of boar's tusks and silver pendants of similar shape in the Palestine excavations, that the amulet was in use long before any Moslem set foot in Syria, probably before Abraham himself ever came from Haran.

I have been recently informed that as might naturally be expected, boar's tusk amulets are used on the horses in Egypt, but I have not seen any example. I have in my possession (given to me by my friend, Mr. C. T. Currelly, Director of the Oriental Museum at Toronto) an amulet (Fig. 18) from Nubia consisting of a lunate section of an elephant's tusk covered with sixty incised circles; it is attached to a leathern necklace on which are four of the ordinary leather cases used by Moslems for containing pieces of the Koran. As the necklace was thus plainly amuletic, we may infer that the ivory crescent with the incised circles was also a talisman. There is plenty of evidence to show that hairs from an elephant's tail as well as objects made of ivory have always been regarded as highly talismanic by many African peoples. I have two bracelets each formed of a hair from an elephant's tail made especially to be a talisman by an aged chief in Angoweland (Fig. 19). These objects were kindly given to me by my niece, Mrs. Montgomery Miller. Pigafetta tells us that such hairs were greatly prized as amulets by the people of Congo, "because the elephant is a mighty beast."

Fig. 20 shows a crescent amulet of boar's tusks kindly given to me by Mr. Percy P. H. Hasluck, who bought it at Tunis. The pendant is a hand in base metal like those on a necklace procured for me by my friend, Mr. F. W. Green, M.A., Jesus College, in the oasis of Biskra. The hand is, of course, one of the most familiar defences against the evil eye throughout all Mediterranean lands. It was even found in the prehistoric graves of Naqada in Egypt. From the use of a hand as a pendant instead of a star as in the Turkish emblem, it is not improbable that the boar's tusk crescent had originated in North Africa quite independently of Turkish influence, and may well have been there many centuries before Christ. This is rendered all the more probable from the fact that similar objects are used as hunting charms by the Bahamba tribe of Batetela in the Congo Free State. These latter must almost certainly be of independent origin.

By the kindness of Mr. E. Torday and Mr. T. A. Joyce I am enabled to figure one (Fig. 21) recently sent home by the former to the British Museum.

Let us now revert to the Ægean and to the mainland of Greece; Fig. 22 shows a double boar's tusk crescent with a Venetian coin as a pendant. It was lately procured for me at Candia in Crete, by my friend Mr. Farrell. He bought it new at a shop in Candia, and it was made up to order with a Venetian coin. It seems more usual to have three small coins pendant from the tusk. "One man told me (Mr. Farrell) that the Turks use Turkish coins, and the Christians anything that is not Turkish. Some of the cab horses in Candia wear these tusks fastened to the neck by a string of large blue beads (*cf.* Fig. 7), but I never saw a Christian's horse wearing one, and consequently saw none in the country where Turks are rare. Nevertheless, they say that Christians once used them, but not very commonly. Since the liberation they despise the ornament as being the Turkish crescent. For the same reason they objected to the star on the Cretan flag, but Jannaris pointed out that crescent and star were the symbol of Byzantium long before Turkish days, quoting the well-known story of a siege of Byzantium, when the crescent moon with the star on the tip revealed an attacking party and thus saved the city" (*supra* p. 241).

My friend and former pupil, Mr. R. M. Dawkins, Fellow of Emmanuel College, and Director of the British School at Athens, tells me that when the members of the British School were carrying on their excavations at Palaiokastro in East Crete, their foreman, a Cretan Christian, always kept such an ornament as those which I have been describing, attached to the neck of his horse. It is not likely that Cretan Christians with all their fierce hatred of Muhammadans and Turks, would regard a boar's tusk amulet as endowed with virtue, if it had no other origin than in the crescent of the Turkish standard.

It will have been noticed that in the description of several of the tusk amulets, blue beads are attached in some form or other, whilst sham turquoises are set in one of them. The turquoise is an especial favourite all across Central Asia not merely for its beauty, but for its talismanic virtue, and it is an especial favourite with Persians, Turks and Magyars. There can be little doubt that the blue beads, which are used all through the eastern Mediterranean as a charm against evil, are themselves imitations of the turquoise, but not of the central Asiatic stone. For the turquoise and its imitations in blue faïence and glass had been prized in Egypt and the neighbouring countries for long ages before the Turks brought with them the turquoise of Central Asia. The Egyptians knew and prized the turquoises of Sinai for many centuries before Christ, and there can be little doubt that the light blue colour which is so common in many Egyptian objects, was imitated from the turquoises of Sinai, which are both paler in colour than those of Central Asia, and have a yellowish coloured, instead of a dark, matrix. When women in Roman Catholic countries place blue on their babies to put them under the protection of the Madonna, whose colour it is, they are but doing what Muhammadan mothers are doing in Turkey and Egypt, where amulets of blue

beads are placed on children. Christians and Muhammadans alike know not that they are but continuing a practice which was in vogue not only when Christ was born, but probably for many centuries earlier.

I now pass to Greece itself. Last autumn Mr. F. W. Hasluck, when travelling in the Morea, saw the double tusk charm on a horse in Triphylia, but the pendant was a cross formed of four cowries sewn on leather. Here the boar's tusks were combined with real cowries (not survivals in silver as in Fig. 7) which are still used, combined with a Christian medal, in Corfu as a child's amulet[1] (Fig. 23), and also in Montenegro, as I am informed by Miss Durham. But in the Triphylia example we have the primitive cowry charm arranged under Christian influence in a cruciform pattern. The next illustration (Fig. 24) shows a fine specimen, procured for me in Athens by Mr. F. W. Hasluck. The band of silver joining the tusks is adorned with a rude heraldic design with a lion as supporter on either side, each lion in turn being outflanked by a man with a gun and a dog. The dealer who sold this example to Mr. Hasluck insisted on a high price on the ground that if any man who had a really valuable horse came along, he would certainly be willing to pay well for it. I also figure (Fig. 25) another from Athens of a much ruder description. It was procured for me by Mr. W. J. Farrell. It consists of a crescent in bone imitating a pair of tusks, the band being represented by a small piece of cloth; the loop for suspension is simply formed of strong thread, whilst the pendant is attached by the same material. The heavy pendant is of silver, but of coarse workmanship, bearing the arms and motto of the King of the Hellenes. I also show (Fig. 26) another specimen from Athens procured for me by Mr. Hasluck, where the crescent of tusks is applied to a leather pad, the central space being occupied by a little circular mirror,[2] over which hang five pendants of blue beads terminating in small silver coins. There is a fluffy fringe of silk all round the outside edge of the pad, which is fitted with a leather strap for buckling it on to the bridle. The next illustration (Fig. 27) shows another specimen from Athens (for which I am also indebted to Mr. Hasluck), but this time made entirely in white metal. The band which joins the real tusks is indicated in the metal imitation, and from it hangs a circular disc, all the upper edge of which is formed of a representation of a pair of conjoint tusks (as in Figs. 7 and 15), whilst the lower part of the disc is adorned with a sham turquoise. Again we may argue that it is unlikely that the Greeks of Peloponnesus and of Athens would have borrowed the crescent from the hated Turk, and again it may

[1] This specimen was given to me by my old friend and former pupil, Professor R. C. Bosanquet.

[2] Miss Durham informs me that in the Balkan States the women regularly wear miniature looking-glasses in their hair, whilst Dr. Hildburgh tells me that the Chinese used mirrors to keep off the evil eye. The use of mirrors then at Athens and in the Balkan is probably for the same purpose, and it may be possibly a survival from very ancient times. The gorgon's eye which brought destruction is surely the earliest recorded case of the evil eye, and a curious detail of the use of his shield by Perseus when he slew her, may possibly refer to its use as a mirror.

be objected that strange borrowings from the conqueror are often made by the conquered. But once more all such suspicions of borrowing in this case will be lulled to rest when we turn to the next illustration (Fig. 28). It shows a silver representation of a double tusk ornament, found by the members of the British School in 1907, when excavating the shrine of Artemis Orthia at Sparta. The illustration is from a drawing by my friend and former pupil, Mr. J. P. Droop, B.A., Trinity College, who called my attention to it. I must here thank the Committee of the British School at Athens for their kindness in permitting me to publish this most interesting object. I learn that several similar objects have been found in the last season's work (1908). I also figure (Fig. 29) a bronze object with trace of gilding still upon it, which seems plainly by its section to be a representation of a double boar's tusk amulet. It was given to me by Mr. Droop, who procured it in Athens, though it was said to have come from Boeotia.

As the date of the Spartan specimen cannot be later than 700 B.C., we may now rest assured that neither the peasants of Triphylia, nor the Athenians, nor the Cretans borrowed the crescent from the Turk.

The next illustration (Fig. 30) shows an ornament imitating in white metal a double tusk horse amulet from Smyrna, where the real tusks are in general use. I am once more indebted for this specimen to Mr. Hasluck. In it there is no sign of the band uniting the tusks, as is the case in the specimens from Athens and from Sparta, but the section of the boar's tusk is carefully preserved.

It may be objected by the critic that, though I have shown that single tusks are used in Italy and New Guinea, I have produced no evidence for such in Turkish areas, and that accordingly the double-tusk ornament has arisen through a desire to imitate the crescent or the crescent moon in some white or ornamental material, such as teeth, ivory, bone, or silver. A glance at the next illustration (Fig. 31) will dispose of this supposition. Here is a single boar's tusk amulet obtained by Mr. Hasluck in Chios, an island still in Turkish hands. As we now find in the Turkish sphere the single tusk as well as the double in use, we need have no doubt that the use of the boar's tusk or tusks in this area is completely parallel to the occurrence of it and them in Italy and in New Guinea, in both of which the single and double tusk are found as amulets.

Again the tiger's claw is used all over Hindustan and Further India, whilst in parts of that area, as in Ceylon, two tiger's claws disposed in crescent shape are likewise used.

We have seen above (p. 242) that in Uganda two lion's claws or two leopard's claws similarly arranged are common, but yet in Uganda as well as practically over all Africa the single lion's claw is in common use.

If it should be maintained by those who love solar and lunar speculations that the two boar's tusks have been arranged in crescent form to imitate the white moon, I need only point out that the leopard's claw amulet from Uganda covered with beads can scarcely be said to represent the silver moon.

Miss Durham has procured recently in Albania from a Kilmem woman

between Robigo and Miloti a crescent amulet, "very efficacious," made of two talons said to be those of a hawk (Fig. 32). Doubtless talons of fierce birds are used for the same reason as the teeth and claws of strong or savage quadrupeds. I here figure an amulet made of a cock's spur (Fig. 33) obtained for me by Miss Durham at Prishtina in Albania, whilst I possess a similar amulet from Smyrna. Furthermore my friend Dr. Dorsey, Director of the Field Museum of Anthropology at Chicago, informed me that in his museum there are several Indian crescent amulets made of claws and horns. By his kindness and that of Dr. Skiff of the same museum, I am enabled to figure three specimens: (1) from the Flathead Indians, Flathead Reservation, Montana; a hair ornament composed of two eagle talons arranged to form a crescent with pendant strips of untanned hide (Fig. 34): (2) from Tonkawa, White Eagle, Oklahoma; a hair ornament composed of two eagle talons bound with beaded buckskin to form the talons into a crescent; it has a fringe of long strips of buckskin with beaded edges (Fig. 35): (3) from the Cheyenne Indians, Lamedeer Reservation, Montana (Fig. 36); a medicine necklace formed of a string of cylindrical glass beads, alternating with two globular glass beads with pendants of two horse teeth, a braid of sweet grass, and a tail of a deer (the upper half of which is dyed red); directly over the tail is a crescent formed by two small calf horns; there are two buckskin bundles of medicine attached to the strings of beads. It is obvious that neither hawk's claws, eagle's talons, nor calf's horns are well adapted to represent the colour of the silver moon. I may point out that bear's claws were a familiar form of amulet amongst the North American Indians, though I cannot cite any case of two such claws forming a crescent. On the other hand my friend Mr. T. A. Joyce, of the Department of Ethnography in the British Museum, and Secretary of the Royal Anthropological Institute, to whose kindness I am constantly indebted, has pointed out to me a double bear's claw amulet from Borneo (Fig. 37) which is here reproduced. It will hardly be said that this faithfully represents the silver crescent moon.

I have shown examples of the imitation of boar's tusks in ivory, bone, gold, silver, bronze, and white metal. But this is exactly parallel to what we find amongst both civilized and barbarous peoples in many parts of the world. If one cannot get the real thing, he must be satisfied with something like it in shape or material or in both. Since the lion has now become practically extinct in the Transvaal and Cape Colony, the Caffres have to be content with imitations of lion's claws which they make for themselves out of horn. I here figure (Fig. 38) a Caffre amulet brought back from the Transvaal during the late war, and given to me by my friend the Rev. Christopher Graham, M.A., Gonville and Caius College, one of the Cambridge Volunteers who had served under General French. It consists of three imitation lion's claws made of horn, and eight white beads strung on a plait of hair. In the British Museum there is a fine Zulu necklace made of the entire vertebral column of a snake, and there are two necklaces of wood carved in careful imitation of the vertebræ of the snake, also presented by the donor of that formed of real vertebræ. There is further a third necklace of wooden

beads, in which, though not carefully carved, the vertebral type can be plainly recognized. The readiness with which barbarous peoples, as well as those on a higher plane of culture, use imitation amulets in lieu of the real objects, has led certain manufacturers in Bohemia to inundate many parts of the world with sham amulets made of pottery, glass, and celluloid. The use of sham claws and tusks made in bone, ivory, or silver, is very common in Italy. Accordingly, in crescents of bone, ivory, gold, silver, or bronze, we have not an attempt to reproduce the colour of the moon, but simply the substitution of another material for the real object, as is customary all the world over.

It has long been held that in the trappings of our cart-horses, which are descended from the great war-horses of the Middle Ages,[1] we have survivals of symbols or amulets brought back to England from the Crusades. Amongst these a crescent or a crescent and star is very common. I have elsewhere[2] argued that although some of these trappings may be descended from ancient amulets, yet in others we may have survivals from the heraldic badges often attached to the bridles of mediæval war-horses, examples of which in my own possession I here show (Fig. 39). My caution seems to have been justified by the fact that in one of the tusk amulets from Athens we have a pendant bearing the arms of the King of the Hellenes, a fact which demonstrates the danger of trying to unlock problems by using only one key. The next illustration (Fig. 40) shows a modern cart-horse pendant in the shape of a crescent and star, purchased by Mr. F. W. Hasluck at a saddler's in Gray's Inn Road. Mr. Hasluck now writes to me that he has recently seen in the Vienna Museum an example in brass of the boar's tusk ornament on Roman horse-trappings, apparently the same as that figured by Daremburg and Saglio (*s.v.* Phalera). It is quite the Gray's Inn Road type (Fig. 41). Fig. 42 shows a Cambridge cart-horse pendant (belonging to my wife); it is a crescent, without the star, but it will be observed that in its cross section, like the Turkish metal example from Smyrna, it fully preserves the true section of the boar's tusk.

Although the use of the crescent horse-shoe for luck may be partly due to the good fortune attached to finding iron, yet it is quite possible that the crescent derived from the boar's tusk and used for centuries on horse-trappings may have contributed to the peculiar popularity of the iron in the shape of a modern horse-shoe. One thing at least is certain, that iron horse-shoes of any kind are later than A.D. 380, and they are therefore long posterior to the use of boar's tusks and their imitations. In the Balkan peninsula the horse-shoe still remains a flat iron slipper with only a small hole in the middle. But as this slipper type was formerly used in England,[3] the employment of the crescent horse-shoe for amuletic purposes must be of comparatively recent date.

The Crusaders may indeed have brought back with them the device of the

[1] Ridgeway, *Origin and Influence of the Thoroughbred Horse*, p. 366.
[2] *Ibid.*, p. 505.
[3] *Ibid.*, p. 503.

crescent and star from the east, but it was not borrowed from the Saracen. On the other hand they probably saw the crescent of boar's tusks in common use on the horses of Italy (where they had continued from Roman days), Greece, the Islands, Anatolia, Syria and Egypt, whilst everywhere in the lands influenced by the emperors of the east the crescent and star were the constant symbol of Byzantium from the days when, as I have already pointed out (p. 241), these symbols appeared on the coins of the Byzantine emperors. Certain it is, that by the beginning of the thirteenth century, the crescent and star were used as a badge in lands remote from Constantinople, by those who had borrowed it from Byzantium. Richard I is said to have assumed as a badge the crescent surmounted by a star after 1198, whilst his brother John used the same device with the motto CHRISTO DVCE.[1] It is the type on the reverse of the silver pennies struck by that monarch at Dublin (1210). The same badge is carved over the stalls of the Dean and Precentor in St. Patrick's Cathedral in Dublin, and formerly in the old cathedral it was on all the prebendal stalls. The authorities are unanimous in ascribing this to John's connection with the cathedral. Finally in 1884, during excavations in the precincts of Christ Church Cathedral in Dublin, a bronze badge was found consisting of a star within a circle from which depends a somewhat stumpy crescent with its points down. Henry III used the same device. On the other hand, it actually occurs on Sassanian coins (Fig. 43) (before A.D. 650) and on those of the Muhammadan invaders of India by A.D. 1206,[2] probably copied by them from Sassanian or from Byzantine coins. The star and the crescent and also a crescent combined with a cross are found on Bogomil grave-stones near Stolac in Herzegovina, two examples of which I have before me from drawings made on the spot by Miss Durham.

It is alleged[3] in reference to Byzantium that "the Cross above the Crescent is found in many ruins of the old Greek city; among others, on the Genoese castle on the Bosphorus." In allusion to this circumstance Lord Houghton wrote in 1843:

> "Be but Byzantium's native sign
> Of Cross on Crescent once unfurled,
> And Greece shall guard by right divine
> The portals of the Eastern world."

But it need not be assumed that it was only after the Crusades that boar's tusk or crescent amulets for horses became known in Upper Europe. Boar's tusks perforated for suspension were used by the Britons of the Stone Age, as is proved by various examples found with interments, and we may not unreasonably infer

[1] These details are from a paper by my friend the late Major Otway Wheeler Cuffe, "King John's Badge, 'Star and Crescent'" (*Jour. Proc. Roy. Soc. Antiquaries of Ireland* vol. xxxii, pp. 74–6).

[2] M. Longworth Dames, "The Mint of Kuraman," with special reference to the coins of the Qarlughs and Khwarizm-Shahs (*Jour. Roy. As. Soc.*, 1908, pp. 389–408).

[3] G. W. E. Russell, *Collections and Recollections*, p. 59 (Nelson).

that they were used as amulets.[1] I have shown that the Romans used the teeth of wild beasts as horse amulets, whilst in the horse trappings at Vienna we have good evidence for the use of the boar's tusk ornament in Roman days. Thus such trappings may well have passed into Gaul and Britain in Roman times. Moreover we have to bear in mind that the boar was a badge of Gaulish chieftains, as is shown by their coins, whilst boar's tusks were placed on helmets both in northern and southern Europe from a very early time, not for mere decoration but rather that the warrior might have the courage and strength of the boar, as is still the belief in New Guinea.

So Seleucus, King of Syria, is represented wearing a helmet of bull's hide with the ear and the horn, which he wore as a symbol of divine strength.[2] For the same reason doubtless, Zedekiah, son of Chenaanah, "made him horns of iron" wherewith Ahab should push the Syrians until he had consumed them.[3] A curious parallel to such practices is afforded by some tribes on Mount Elgon in Uganda, whose warriors wear a crescent-shaped head-dress (Fig. 44) made of the tusk of a hippopotamus. The Baganda formerly used a crescent head-dress made of iron inlaid with copper (Fig. 45), apparently copied from the hippopotamus prototype. Their proverb, "When you think of the new moon, think of me," does not refer to this object, but to the actual new moon itself. The latter not only seems more natural, but Mr. Roscoe has now ascertained that the iron crescent seems only to have been worn for war, and was not lunar. For both these specimens and for the information respecting them I am indebted once more to my friend, Rev. J. Roscoe, C.M.S., Uganda. The hippopotamus tusk breast ornament[4] (Fig. 46) used by some African tribes is probably worn for the like purpose. I also am enabled to show, by the kindness of my friend Mr. C. W. Hobley, C.M.G., Assistant Commissioner, Nairobi, British East Africa, three head-dresses worn by the Ja-Luo of Kavirondo. Fig. 47 shows a cap made of the dewlap of an ox, split and stretched over a block, and decorated with a hippopotamus tooth. Another (Fig. 48) is decorated with ram's horns and cowries, whilst the third (Fig. 49) is adorned with reed buck's horns and cowries. These remind us of the combination of boar's tusks and cowries in Greece, mentioned above.

There are thus two main streams contributing to the use of the crescent as a badge by the Turk—the old amulet made of one or two boars' tusks, and the crescent and star which he found everywhere in his new empire. But the latter may itself have originated in the double boar's tusk, for astrological devices do not appear in Roman art until a comparatively late period. It was only in the century before Christ that the Chaldean astrologer became dominant at Rome. Without denying that representations of the moon may have been made and venerated by the inhabitants of the Swiss lake-dwellings, and that in some regions and some periods, the crescent of boar's tusk was likened to the new moon; yet with the

[1] Evans, *Stone Implements*, pp. 47, 83, 148, 328. *Cf.* those from Hod Hill, Dorsetshire, in the British Museum.

[2] Appian, *Syr.*, 56. [3] 1 Kings xxii, 11. [4] From my own specimen.

evidence of the Spartan and Danubian metal imitations of boar's tusk amulets before us, we may conclude with some safety that the use of crescents of boar's tusks and of those imitated from such boar's tusks was far older in the region ruled by the emperors of Byzantium than the badge of crescent moon and star. It may well be that the emperors of the East adopted the Star of the East as a fitting device referring both to their empire and to the unerring guidance of the Star of Bethlehem. The Western star (Hesperus), placed by the Western Locrians as a badge on their public seal and also on their coins in allusion to their geographical position, affords a parallel for the former, whilst the statement made in books of heraldry that Richard I assumed the star as that of Bethlehem would certainly countenance the latter. As Richard was simply borrowing the device of the Byzantine emperors, it may well be that the star in their badge was generally recognised as the Star of Bethlehem.

When the Turks came they found the boar's tusk crescent in use, and they had been probably using it themselves at least from the time of their settlement in Asia Minor, where they would certainly have become acquainted with the boar, an animal not to be found in the steppes of Central Asia. In their standard consisting of the crescent and horse-tail and in their horse ornaments we may perhaps recognise only another form of the amulet of badger's hair and teeth of wild beasts used now in Italy on horses (Fig. 50). I am enabled, to show (Figs. 51, 52) by the kindness of Dr. List, Keeper of the Imperial Armoury at Vienna (and from photographs taken by himself) two of the trophies captured from the Turks at the siege of Vienna in 1685 (*cf. supra*, p. 243). One of these contains two boar's tusks, whilst the other, described as a standard by Mr. Hasluck, has no less than four. Accordingly they would have had little hesitation in adopting the crescent and star which they saw everywhere in their new dominions, and this all the more readily as they were anxious to represent themselves as the true successors of the emperors of the east.

We may now conclude with high probability that in the Turkish crescent we have but a survival of one of those amulets formed of the tusks and claws of boars, lions, tigers, leopards and other fierce animals, and that we have here but one more of the many touches that make the whole world kin.

DISCUSSION.

Mr. ARTHUR EVANS said that Professor Ridgeway had certainly proved his point that a widespread class of amulets—chiefly used as horse ornaments—originated from two boar's tusks and were in their fundamental conception not lunar emblems but of the same nature as tiger claw or bear tooth charms. They were in fact due to " sympathetic magic," and the existence of amulets of this class consisting of only a single tusk is specially pertinent in this connection. Such at least could have no reference to the crescent moon.

Crescent-shaped phaleras of this kind frequently adorn the breasts of

horses on Roman monuments; and they seem to have been of great antiquity in Syria. Crescent-shaped pendants of bronze with the horns downwards are also common in the Swiss Lake Dwellings of the Bronze Age. Mr. Evans could give further striking instances of the diffusion of this type of charm in the Balkan countries. He possesses exceptionally fine examples from Kulen Vakup in Bosnia. They seem to have been specially due in those regions to Turkish and Muhammadan influence. It may, indeed, be taken as a general rule that, wherever Islam holds, amulets and talismans are exceptionally abundant. They seem to be a kind of compensation for the absence of images.

It might be freely admitted that this class of charm was crossed by the crescent symbol of purely lunar origin. This celestial element came out in the star suspended between the tusks in several examples.

As the Turks were pre-eminently a horse-loving race, Professor Ridgeway's view that amulets of this kind supplied the true origin of their crescent emblem may well contain an element of truth.

There can indeed be no doubt that the crescent and star as the badge of Ottoman Empire was in the main a direct inheritance from Byzantium. The crescent and star already appears as the civil badge on the Greco-Roman coinage of Byzantium in allusion to the legend that the miraculous appearance of the moon had saved the city from a night attack by Philip of Macedon. Constantinople took over the time-honoured emblem of the city, and later on when a good deal of Western feudalism had blended itself with Byzantine traditions the crescent moon with the star above became the armorial badge of the imperial scutcheon. It was thus, in turn, adopted by the Slavonic princes, who from time to time assumed the imperial title, and finally in Servia, Bosnia and elsewhere became a general badge of Illyrian nobility.

The Turks on the Conquest of Constantinople took over these armorial bearings with many of the external symbols of Byzantine Empire—Mahomet II making himself out politically as the legitimate successor of the last Constantine.

But in the Ottoman adaptation of the star and crescent a noteworthy modification is visible. Where, as in the earlier device alike on the Byzantine coinage, the imperial scutcheon and star is placed above the moon, in the case of the Muhammadan version the moon is half turned over above the sky and seems as it were to impale it with its horns. It is worth considering whether this may not be due to influence of the old Turkish talisman made from the two boar's tushes to which a star is sometimes suspended as a kind of religious afterthought. The contrast between the old Byzantine emblem and the later Turkish badge, of such tragic import in the lands between the Danube and the Ægean, suggests to him:

> Erstwhile above the moon Illyria's star
> Shed sov'ran radiance from her shield afar;
> Now, cast beneath the horns by Fate's hard stroke,
> Her captive beams proclaim the Paynims' yoke.

Mr. M. Longworth Dames: It seems clear that Professor Ridgeway has proved in his most interesting and instructive paper that the badge of the star and crescent was used in Byzantium under the later emperors, and that the origin of the

crescent may with great probability be attributed to a charm composed of two boar's tusks joined at the base and hung so as to form a crescent with the points turned down. But it remains to be shown when this badge was first adopted by the Turks; was it before or after their capture of Constantinople? And it seems possible also that the Turks may have been familiar with the star and crescent in some form, though not, perhaps, as a national emblem, before they came in contact with the Byzantine Empire. I deduce this from the appearance of these signs on the coins of some kings of Turkish origin who reigned in Afghanistan and the Indian frontier. As is well known the Kings of Ghazni, beginning with Conqueror Mahmūd, were Turkish slaves of the Samānī kings, and their successors the Kings of Ghor (who began to reign shortly before A.D. 1200) although not Turks themselves, relied to a great extent on their Turkish troops, and were succeeded in their Indian conquests by Turkish kings, the descendants of their Turkish servants. On their coins and those of Yalduz or Yildiz, one of these successors, the star and occasionally the crescent appear, and the same may be said of the Karlugh Kings, also Turks, who reigned soon afterwards in the Kuram Valley. E. Thomas considered the star as the special badge of Yalduz, whose name means "star." I have given specimens of some of these coins in a paper of the "Coins of the Kuramān Mint," now about to appear in the *Journal of the Royal Asiatic Society*. One coin, dated 605 (*i.e.*, A.D. 1209) bears both the star and crescent. I may add that these Eastern Turks were never brought in contact with the Byzantine Empire, and that their coins show no traces of Western influence, and no imitation such as is well known on the coins of the Urtukes and others, of reproduction of Byzantine types. They were unconnected, except remotely, with the Ottoman Turks, and possibly the use of these badges may be referred to an earlier period when the two branches of the race were more nearly connected. In any case, even if there were such ancient use it would not exclude the adoption of a new form of similar emblems in Asia Minor and Constantinople.

Dr. WRIGHT remarked that Professor Ridgeway, in seeking to show that the crescent had evolved from boar's tusks, had adduced several instances of early "crescent ornament" in which the shape of the crescent was clearly borrowed from that of the tusks, but he had omitted to mention examples which had come down to us from a still higher antiquity, the so-called *Mond-bilder*, or Moon-figures, made of clay, which are found in Swiss lake-dwellings of neolithic date. These objects seem to have served no other purpose than that of decoration, being perfectly crescentic in shape and exhibiting no trace of having been evolved from any such object as a tusk or tooth.

The earlier the instance the more important was it in throwing light on the origin of the crescent. The evidence before us showed that the crescent made of clay was earlier than the crescent made of boars' tusks. The tusks might have been utilised in later times as providing the means for the easy manufacture of the crescent.

Miss M. E. DURHAM said that the crescent and the star was not uncommon in Bogomil graves in Bosnia and the Herzegovina. She supposed that in that case they were Slavonic coats-of-arms or crests.

Explanation of Plates.

Plate XIX.

Fig. 1.—Gem of third century A.D.
Fig. 2.—Coin of Byzantium with crescent and star.
Figs. 3, 4.—Boars' tusk ornament, New Guinea.
Fig. 5.—Two boar's tusks, Nagas of Assam.
Fig. 6.—Leopard's claws, Uganda.
Fig. 7.—Horse ornament, Smyrna.
Fig. 8.—Boar tusks covered with beads, Chios.
Fig. 9.—Ivory imitation tusk crescent, Eskishehr.

Plate XX.

Fig. 10.—Pair of tusks, Montenegro.
Fig. 11.—Albanian crescent, Prizren.
Fig. 12.—Boar's tusk amulet, Rome.
Fig. 13.—Wolf's fang amulet, Prishtina, Albania.
Fig. 14.—String of amulets, Middle Servia.
Fig. 15.—Gold tusk crescents, Belgrade.

Plate XXI.

Figs. 16, 17.—Boar tusks, Jaffa.
Fig. 18.—Ivory crescent, Nubia.
Fig. 19.—Elephant's hair bracelet, Angoweland.
Fig. 20.—Crescent of tusks, with hand, Tunis.
Fig. 21.—Crescent of tusks, Congo.
Fig. 22.—Boar's tusks, Candia.
Fig. 23.—Cowry and medal, Corfu.

Plate XXII.

Fig. 24.—Tusks ornament, with worked silver band, Athens.
Fig. 25.—Ditto, rude work, Athens.
Fig. 26.—Ditto, with mirror, Athens.
Fig. 27.—White metal specimen, Athens.
Fig. 28.—Silver crescent ornament, Shrine of Artemis Orthia, Sparta.
Fig. 29.—Bronze crescent, Bœotia.
Fig. 30.—Metal tusks ornament, Smyrna.
Fig. 31.—Single tusk, Chios.
Fig. 32.—Hawk talons' crescent, Albania.
Fig. 33.—Cock's spur amulet, Prishtina, Albania.

Plate XXIII.

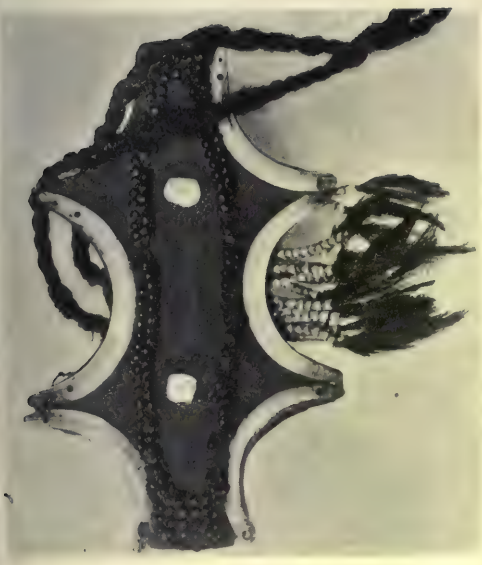
Figs. 34, 35.—American Indian eagle talons' amulet.
Fig. 36.—American Indian amulet.
Fig. 37.—Bear's claw amulet, Borneo.
Fig. 38.—Imitations lion's claws, Kaffir.
Fig. 39.—Mediæval heraldic horse ornaments.

PLATE XXIV.

Fig. 40.—Horse ornament, Gray's Inn Road.
Fig. 41.—Roman horse trappings, Vienna Museum.
Fig. 42.—Cambridge cart-horse pendant.
Fig. 43.—Sassanian coin.
Fig. 44.—Hippopotamus tusk head-dress, Mount Elgon.

PLATE XXV.

Fig. 45.—Baganda crescent head-dress of iron.
Fig. 46.—Hippopotamus tusk breast ornament.
Fig. 47.—Ja-Luo head-dress, with hippopotamus tooth.
Fig. 48.—Ja-Luo head-dress of ram's horns and cowries.
Fig. 49.—Ja-Luo head-dress of reed buck's horns and cowries.
Fig. 50.—Badger hair and tooth amulet, Rome.
Figs. 51, 52.—Turkish trophies with boars' tusks, Imperial Armoury, Vienna.



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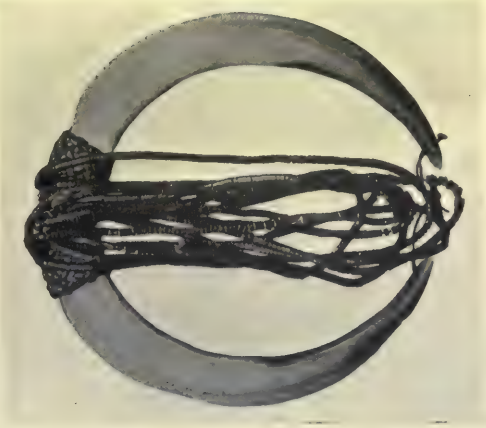
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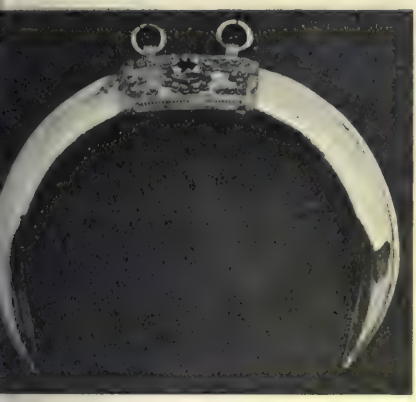
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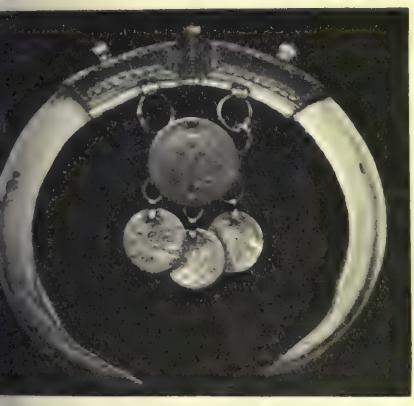
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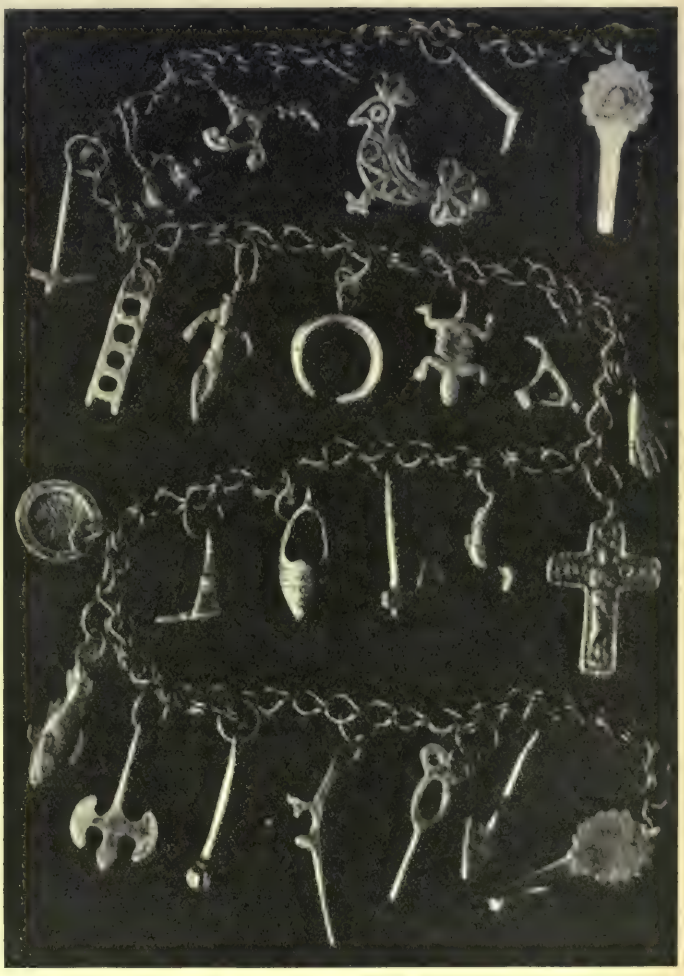
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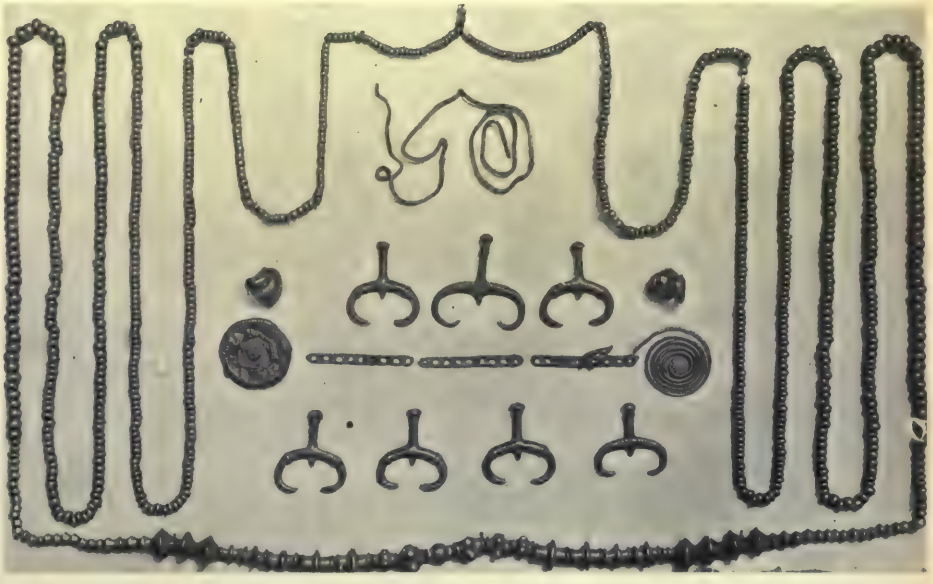
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THE ORIGIN OF THE TURKISH CRESCENT.



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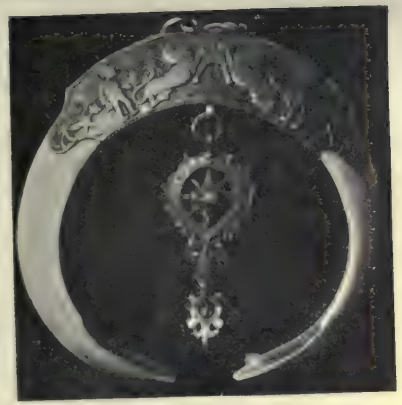
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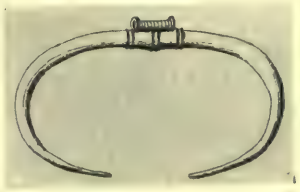
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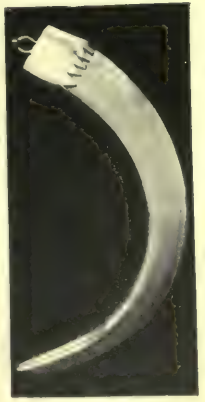
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THE ORIGIN OF THE TURKISH CRESCENT.



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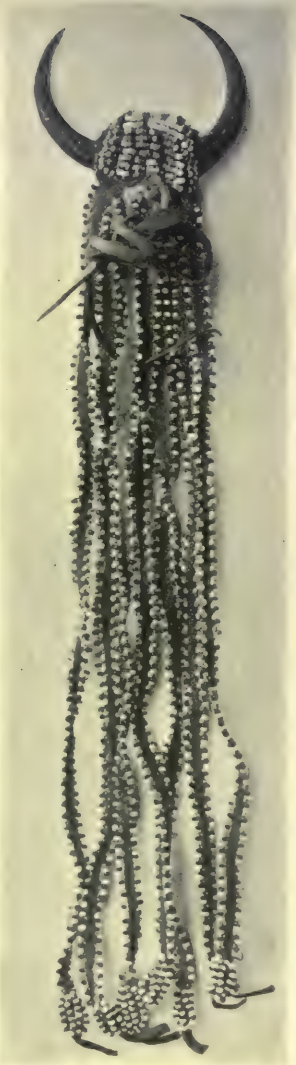
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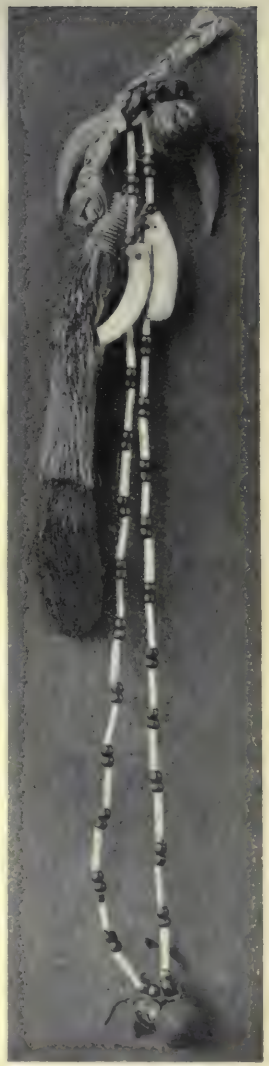
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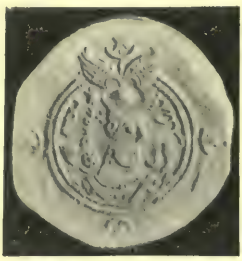
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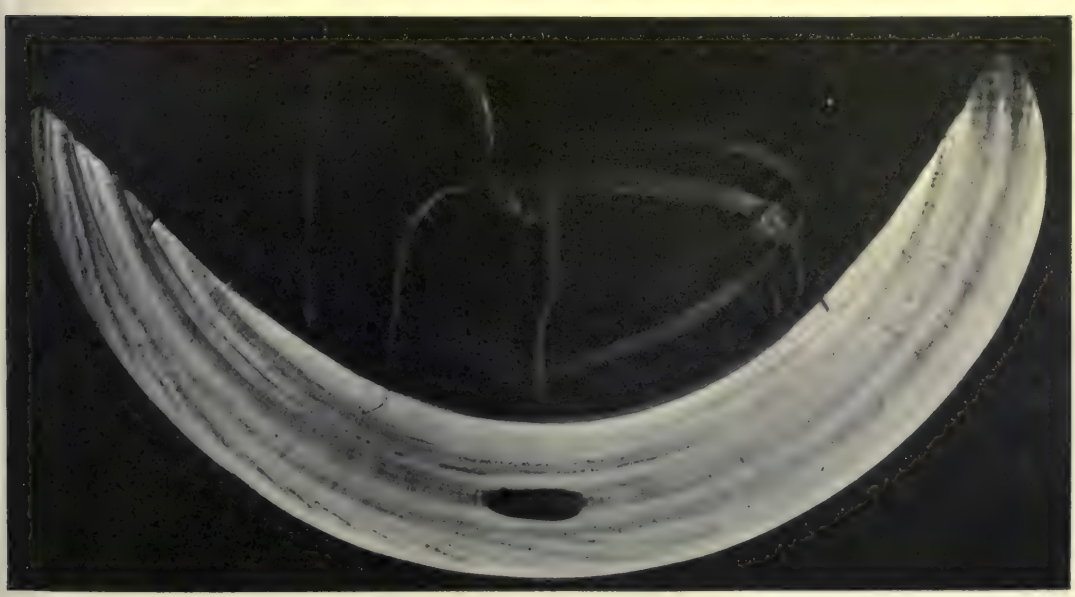


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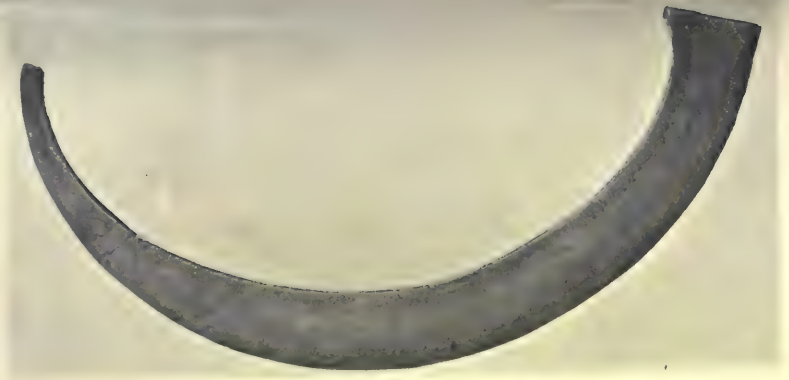


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THE ORIGIN OF THE TURKISH CRESCENT.



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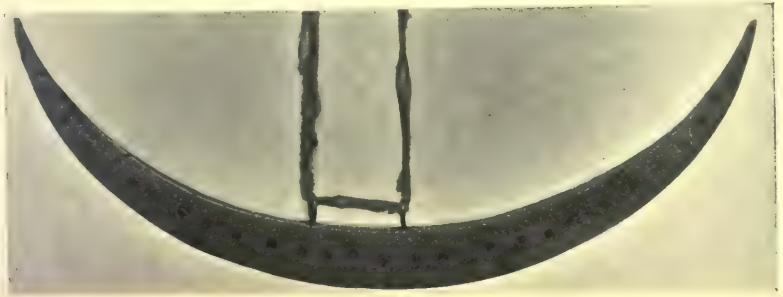
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52

CHILDREN'S GAMES IN BRITISH NEW GUINEA.

By Captain F. R. Barton, C.M.G.

[With Plates XXVI–XXVIII.]

I do not think there can be any children in the world more attractive than the Papuan children, and those of the tribes who inhabit the south coast from Hall Sound to Aroma are the most attractive of any. These were the children I knew best during my eight years' residence in New Guinea, and it is the games played by them that I propose chiefly to describe. I wish it were possible to convey to my readers the pictures which I carry in my mind. But even with the help of the illustrations I can only present a wooden, lifeless set of images. The gay buoyancy of the children's laughing voices; the sinuous movements of their little brown bodies; and the exquisite suppleness of limbs—these delights to ear and eye cannot be conveyed; nor can I reproduce in words the clear crisp atmosphere—were the sun ever so hot—which glorified those sea beaches of Southern Central New Guinea day after day throughout the seven months' season of the south-east trade wind. From the middle of May to the middle of November, as sure as the rising of the sun, does the south-east wind blow. The night land-breeze dies down soon after sun-rise, and until nine in the morning there is usually a calm, then an almost imperceptible breath out of the south-east scratches catspaws upon the unruffled surface of the calm sea, and this is followed by another and another breath, each of increasing vehemence—until the sun is approaching the zenith. At mid-day the wind is positively violent, and the sea between the shore and the barrier-reef, looming like a white ribbon parallel to the coast some two or three miles away, is grown turbulent and thickly flecked with white broken wave-crests, while the long shining fronds of the coconut palms ashore lash the air with noisy frenzy. The village houses are not built on the shore: they are built on piles—a thick cluster of houses—on the shore-reef some hundred yards more or less from low water mark.

We will assume it is such a day as I have shortly described and that we are on the sandy beach opposite Gaile village. The hour is two o'clock; the wind is blowing for all it is worth; and the tide is ebbing fast. The children are leaving the village in little companies—boys and girls of ages ranging from 6 to 14—some in canoes and some wading and swimming. You cannot distinguish at a

distance the boys from the girls, except, perhaps, the two or three larger girls who may be among them, for these likely enough will not have discarded all their petticoats (*rami*). But the others are as naked as fishes. Having reached the shore you see that several of the girls are carrying netted bags. These are for the shell-fish which they are setting forth to collect on the reefs now beginning to show bare above the receding tide. Some companies go this way and some that, and we will attach ourselves to one of them. A very merry lot they are as they walk along the hard wet sand, pushing and jostling each other, and talking and laughing at the top of their voices. Soon the point is reached opposite a favourite reef-patch, some four or five hundred yards to seaward. The tide is so low that we can wade to the reef across the intervening water. But the smallest children stay behind on the beach to collect minute kinds of shell-fish from the shingle, or occasionally to join in a most exciting hunt after some small fish that has been left behind by the receding tide and isolated in a shallow pool. We will watch them for a moment and catch up the others presently. Kneeling or squatting in a row they begin scraping up the sand and shingle with their little hands, sifting it and picking out the small bivalves, which are collected in a coconut shell, or small wooden dish, and meanwhile they chant in piping voices a little song, which is as follows:—

Mini-mini ta
Kuaraboi ta.

The translation of these words is simple, for *mini mini* and *Kuaraboi* are the names of two small kinds of shell-fish, and the *ta* means one or a (the indefinite article). I wish all the game songs were as simple to understand as this one! Presently, however, I shall have to refer to a number of such songs of which the meaning is entirely lost.

Now we must catch up the other children: they have crossed deeper water and have reached a coral reef further out, where they are daintily tripping over its rough surface exploring the crannies for the quarry. As we approach them we can hear them singing in unison. But for the glad high-pitched note of their young voices, their song would sound monotonous. The burden of their song is as follows:—

Raga-raga e didi bo mai e!
Nono-nono e didi bo mai!

The interpretation of it is "*Raga-raga*—come forth from the rocks! *Nono-nono*—come forth from the rocks!"

Another rendering of this song is as follows:—

Gomata mai gui-gui
Didi mai hore-hore
Raga-raga ebuda-ebuda
Nono-nono etukere etukere.

The words of this song are translatable excepting *ebuda* and *etukere*, as :—

The tide has ebbed
The rocks are bare.
Raga-raga . . .
Nono-nono . . .

There is no joking and jostling now: they are all serious, for the song is in the nature of enchantment to draw the shell-fish from their hiding-places, and levity might break the charm. And thus they will wade together from reef to reef, until the tide has covered the bare coral expanses again, when they return to the village with their spoil, while the clear air rings again with their happy laughter all the way home.

It may be objected that these shell-fishing jaunts are not, strictly speaking, games. But I think that those of us who as children ever went a-nutting, or blackberrying, or mushroom-hunting will forgive me if I classify them as games. I have watched these Papuan children carefully and sympathetically, and I am sure that the thrill of enjoyment awoken by nutting in England and that of shell-fishing in Papua are one and the same thrills. Neither employment contributes seriously to the stocking of the larder, so surely we need not call them economical pursuits, or by some such cold name. I do not mean it to be inferred that shell-fishing by the Papuan tribes has always been mere child's-play. The huge deposits of shells on the hill-tops and at places on the islands formed by barrier-reefs, testify clearly to the fact that in bygone times the people subsisted to a great extent on shell-fish. Whether this was due to periods of famine, or to the gardens having been despoiled by enemies, there is nothing positive left to inform us. In the bygone ages of man it is almost certain, I suppose, that those tribes who lived on or near the sea-board—whether in Denmark, or Peru, or New Guinea, or elsewhere,—depended very largely upon shell-fish as an article of diet. It is one of the few sources of food-supply which can be captured without the help of any ingenious human contrivance. Shell-fish have been the salvation many a time of shipwrecked crews who have found a refuge upon desert islands. There was a time, I think, when shell-fish were as important an article of diet to certain of our ancestors as wheat-flour now is said to be to us. One does not know under what circumstances this natural source of food supply was first discovered ; but I was once told by a man who had lived many years in Borneo a thing which if true seems to me to be suggestive. He told me that adjacent to the place where he was living there was a wide fringe of mangroves on the margin of the sea. And he said that at low spring tides, great troupes of monkeys were in the habit of coming to the coast from inland, and that they abode in these mangroves while the tides remained low, hunting for and gorging themselves with the shell-fish that abound there. I cannot vouch for the truth of this story, but there are few shorter ways of ascertaining the truth of a thing than that of inviting contradiction.

Before passing on to other games there are one or two other shell-fishing

songs which I must give. A small conical shell which lies buried in the sand at the bottom of secluded sea-inlets is found in New Guinea, and its Motu name is *Daka*. These shells have a sharp apex, and the method of finding them by the children (they are so small that grown-up people don't bother themselves to look for them) is to wade about in the shallow water and feel for them with their feet. These people have a verb to express feeling for a hidden thing with the feet which is *Tahumoi*.

The tide being low, one girl says to another: "*Henamo, inai gomata na vada e gui, daka ai tahumoi*" (my dear, the tide has gone out—let us feel about for *daka*). Others, perhaps, join them, and then they wade about in the sandy mud singing:—

Daka e daka e.
Oi hidibou
Lau idiou
Daka e hidibou.

I cannot give an interpretation of this song. It clearly begins with an apostrophe to the *daka*—the shell-fish—but the rest of it is incomprehensible.

The only other two shell-fishing songs of which I know the words are sung by girls when they are diving from an anchored canoe. This pastime takes place only during the calm weather which prevails at the change of the seasons. A number of girls of all ages crowd into a canoe and pole out to a submerged reef. The canoe is anchored over the reef, and then they strip off their *ramis*, and taking a hammerstone dive down to knock the clams and oysters off the sides of the coral patch. After two or three dives a girl climbs on to the canoe and squats or lies prone to warm herself in the sun when another takes up the diving. The songs sung by the girls who are thus basking are two.

1.

Vea ta nerigo, vea ta nerigi[1]
Tau dirava matana
Kokoahu lao, daehu lao.

vea = a calm by day; *nerigo* = nautilus (?)[2]; *tau* = man; *dirava* = great spirit; *matana* = his eye; *Kokoahu* = (?); *daehu* (?); *lao* = go.

2.

Butu-butu gima lele
Tauna abe lagava taune
Tauna abe e buria taune.

Butu-butu = clam; the rest of the meaning of the song is obscure, but it

[1] At Tupuseleia the first line of this song is rendered: *Vea tauke, asi tauke.*

[2] Cf. *vereverego* = nautilus, at South Cape, Bona Bona, Maiwara. Also cf. "*tandirava matana*" with *sumara matana* = eye of the moon, at Arifamu.

apparently makes reference to a man taking a deep breath, and to a man being buried. It may be that these terms refer to diving.

Hula shell-fishing song called *Kariga.*

Kariga ura Kuluria
Arigi ai pana abia
Nawale ai pana abia
Dogo—o—o—o—o.

Kariga = sea-urchin ; *gula* = crayfish. Cf. *nawale* with *m'wale* (Dobu).

This concludes my observations as far as the collecting of shell-fish is concerned, and I now pass on to other kinds of play.

The most generally known game in British New Guinea is that of cat's cradle. I cannot speak with certainty, but I believe it to be played by the children of every tribe known to the Government. The girls and boys can all play it. As the boys approach manhood they generally forget how to make the various string figures, but I have noticed that the women as a rule have not forgotten them. The variety of figures made by the children is many and each figure has a name by which it is known. I should have liked to have made drawings of the various figures and so compared the figures known in different parts of New Guinea. But to have done so would have taken more time than I could spare from my official duties in that country ; children have from time to time vied with each other to teach me some of the figures, but I found them too complicated, and had to give it up in despair. Unfortunately, therefore, I am able only to give very little information upon this interesting subject. Indeed, I can merely quote some of the names of the figures employed by the children of the Nara and Aroma tribes.

The Nara tribe is fast dying out—due to causes which would take too long to explain here. They are one of the tribes of pronounced Melanesian origin, and at some time or other after their arrival in New Guinea, they were pushed inland to the mountainous country behind Hall Sound. In after years they came down again towards the coast, and they now inhabit the rather sterile strip of country immediately to the east of Hall Sound. In their dialect, cat's cradle is called *Idara-idara.* A favourite figure is *Ovasi,* which signifies the native cucumber. They sing a song while manipulation is in progress. It is :—

Ovasi kena mai bania, nakumu bavu laia, bolosa kena mai bania.

Its translation, as far as it could be translated, was given to me as follows :—

Cucumber little I eat, your child go and look after, bolosa (a small nut-like fruit) little I eat.

Some other figures known to the Nara tribe are: (1) *lailema* = coot; (2) *belani* = dawn ; (3) night ; (4) sea ; (5) *edo* = gecko ; (6) *kauasi* = snake ; (7) *uau* = (8) saltwater crayfish ; (9) *olava* shark.

The following are some of the names of figures made by the children of the Aroma tribe to whom the game of cat's cradle is known as *walo-alo,* which means literally string patterns.

(1) (*a*) Bush-sun, (*b*) village sun, (*c*) night, (*d*) morning star, (*e*) dawn. These form a series, and follow one another in the order given. The figure "dawn" ends by the string suddenly being pulled out straight.
(2) *Uba* = a small house.
(3) *wai.*
(4) *waulo.*
(5) *kimo-kimo* = a kind of *taro.*
(6) *ewa* = a species of cray-fish.
(7) *begarai.*
(8) *veva-kali* = a crowd of people.
(9) *bagi-bagi* = fighting.

All the cat's cradle figures made by Papuan children are perplexingly complicated. In some cases two pairs of hands are required to evolve the patterns out of each other; but many of the most complicated series are contrived by a single child with the help of fingers, toes, and teeth. Their fingers are very deft and supple, and it is a pretty and fascinating sight to watch them at the game.

On Plate XXVI, is seen a little girl of Lese village, one of the villages at the east end of the Papuan Gulf, who showed me an amusing series of four figures representing a domestic squall. (The little girl is in mourning, as evidenced by the absence of top-knots, and by the cut of her petticoat, and by the braided garb worn across the chest.) The story is that of a man who had two wives, who quarrelled (Fig. 1). The two uprights between the horizontals represent the two wives. By a deft manipulation of the string, these uprights gradually approach each other towards the centre (Fig. 2). Having come into contact, which is cleverly shown by a suggestive flinging out of four arms, there follows a furious row (Fig. 3). The fourth figure is the arrival upon the scene of the polygamous husband, who brings about a reconciliation. Unfortunately, I only had three spare photographic plates at the time; consequently the last picture of the series is missing.

I must now pass on to other games, and will illustrate first a Motu game called *posi-pata.* It is a game played by young girls, and consists merely in tossing a small bladder into the air and then keeping it up by patting it constantly upwards with the hand. The bladders commonly used for this purpose are found washed up on the sea-beaches at certain seasons of the year, but sometimes the bladders of quadrupeds are used. (Cf. Plate XXIX, Figs. 5 and 6). While the game is in progress the following song is sung:—

Vea vea Dauko
Dauko vea lalonai
Kualahu e veria lasi—
Vaoha nani, vaoha nani,
Lebeta nani, lebeta nani—
Egu posi kuboro-kuboro.

I can give a translation of some of these words, though they do not convey much sense. The literal translation of *posi-pata* is bladder-patting.

Day calm Dauko[1]
Dauko day calm inside
Smoke (he) draws not
Sea-urchin——, sea-urchin——
. . . . . .
My bladder is globular.

Another favourite game, especially among the small boys, is known by the Motu tribe as *epi*, at Hula as *betipi*. I should think the game is, properly speaking, a boys' game, and not intended to be played by girls, though sometimes I have seen them playing it. It is a simple but vigorous game, and to be a successful player a boy must be very active. The contesting boys form two sides of even number, and take up their positions in two bodies on a sandy spot of ground some twenty yards apart. A boy from each party singles himself from the rest. The one stands firm while the other runs with increasing pace towards him. The motionless boy does not move until the approaching boy is almost up to him. He then with a quick sinuous movement and a clap of his hands leaps to one side or the other. The object of the other boy is to kick him. He cannot tell whether the stationary boy will dart to right or left, and having acquired full speed, he must kick out with this foot or the other so suddenly and so far forward that he almost always falls in the attempt, whether successful or not. No forfeiture of any kind results from falling. Each boy has his turn, and the winner is the boy who can make the greatest number of contact kicks, and avoid as often as possible being kicked when he is the object boy. The movements in this game are so rapid that I never attempted to photograph it. I collected four variants of the song belonging to the game. These include two Gaile variants, and one from Tupuseleia and one from Hula. The two Gaile ones are as follows:—

1.	2.
Aeva aeba panikete	*Aeva aeba panikete*
Moraka moraka	*Moraka moraka*
Urau eremutu	*Kurau vaia*
Ubi ubi ava roia	*Kereni so vereni so.*
Kuare roia Kuare.	

The Tupuseleia song is longer, but its original meaning is apparently the same, since the words *aeva* or *aiva*, *moraka*, and *urau*, or *kurau*, or *kurai*, are common to it and the two Gaile songs. The meaning of these songs is lost, and I am unable to hazard an interpretation of them. All I can suggest about them is that

[1] Dauko is a coral island forming part of the barrier reef off Port Moresby.

aeva is a centipede (Hula and Mailu dialects); *moraka* is a small land crab (Motu dialect); and *ura* is a crayfish (Motu). The Tupuseleia song runs thus :—

Epina epiaia
Aiva panikete
Moraka moraka
Kurai reremi to
Avara baine
Epe nese pae[1] *nese*
Uaia—hui-i-i-i.

The Hula variant of the song is :

Betipi Karena
Orea orea
Pata pata Kaneve Kanave.[2]

The next game is called *bido-bido*, and it is played by the children of the Motu villages and at Hula.[3]

Two rows of boys and girls face each other and opposite couples lock hands in sedan-chair fashion. A small boy then projects himself prone upon the lane of hands at one end of the row, and is tossed along it by an upward and forward jerking of the locked hands to the other end, and as he passes each couple, they hurriedly run to the fore-end of the avenue and take up position as before, thus making an endless lane.

The following song is sung :—

Gaile version.	Tupuseleia version.
Bido be bido	*Bido bido lore lore*
Bado be bado	*Kinibo Kanabo*
Ana bido bido	*Daika mero vabuna e vabu*
Ana bado bado	*Bigo-si bago-si*
Ana mairi mairi.	*Gerema dubu raita dubu*
	Gose-gose vasi-o.

Hula version.

Bagula bagula vane vane
Gena vane oi oi
Moita Kele petau talia (*a pause here*)
Oi loue.

The sense of these songs is so obscure that I do not venture to suggest any. Perhaps they were never anything else but nonsense.

[1] *pae* is a freshwater crayfish (Motu).

[2] *kanave* or *anave* in several dialects means a small species of seagull, or a tern.

[3] At Hula the small boy walks upon the linked hands. The last two words in the Hula version of the song signify in the Motu dialect, "You go back," and may have reference to the constantly changing position of the linked couples. In Aroma dialect this game is called *unukorato*. (Plate XXVIII, Fig. 4, and cf. Plate XXIX, Fig. 2).

A game precisely similar to *bido-bido* is played by the children of Wanigela village in Collingwood Bay (north-east coast). There this game is called *tauf*, which means "Cuscus." I do not know whether it is accompanied there by a song.

This game is known also at Mailu, an island lying near the coast off Port Glasgow. The tribe who inhabit the opposite mainland and to the westward as far as and including Cloudy Bay, speak the same dialect, and doubtless form part of the same tribe. (Mailu is an interesting place inasmuch as it is here that we find a fusion of the curvilinear forms of ornamental design belonging to the eastern end of British New Guinea, and the angular forms belonging to the tribes of the Central District.)

The game under notice is called at Mailu *oura*. The hands are linked as already described, and the boy stands upon the first pair of hands. Then, to the accompaniment of a song, he is gently moved up and down by a lowering and raising of the hands. The song ends with a little hoot and thereupon the boy jumps to the next set of four linked hands. The song has two verses, sung alternately, and is as follows:—

1.

Abona oura duramba oura vane vane
Vane urei tau.

2.

Ena vane oi oi oi ta gewo boi tau
Boda tariena boi tau.

The next game is a Papuan version of the good old game of hide-and-seek. It is probably known to all the tribes of Melanesian origin, though I cannot find in my notes any reference to the game being played at Hula. This tribe, however, owns very little land, and that which they do own on Hood's Peninsula they only acquired by conquest about sixty or seventy years ago. They are great mariners and fishermen, and are quite out of their element ashore. As the hider in these hide-and-seek games invariably represents an animal or a bird, it may be that these fisher folk have forgotten the game.

The Motu tribe call this game *kumu-kumu*, or *magani-magani*. A boy lies prone on the ground hiding his face, and feigns sleep. The other boys playing the game go alongside him. One of these then kneels down and pats him on the back singing:—

Kumu-kumu (*or kamo-kamo*) *tau ta wi*
Avalagadi gimauine
Bamahuta tarika-tarika
Hari bunu Kamuna (*pause*) *ini . . . . ini.*[1]

All but the prone boy then run away and hide in different places. He, after

[1] The only line in this song which is comprehensible is the third line, and this means in Motu "do thou sleep soundly."

a while, arises, and his object is to find the hiding boys. Any one of these having been discovered, he is hotly pursued and makes a dash for a base which has been previously selected, and his object is to gain this base without being captured by his pursuer.

A similar game is played by the children of Wanigela village in Collingwood Bay (north-east coast). Here the game is called *koko-rerek*, signifying the Papuan domestic fowl. (This handsome breed of fowls is common in nearly all the villages on the north-east coast.)

The boys playing split up into two even sides. Those on one side all lie prone on the ground covering their faces, while the others go into hiding. The prone boys then arise and sing:

Koko-rerek o tauf gunag o.

After which one of them says in the Wanigela dialect: "The day is breaking, the roosters are crowing—let us go and seek them."

The translation of the words of the song has been given to me as follows:—

Koko-rerek = domestic fowl; *tauf* = cuscus; *gunag* = a dark-skinned variety of cuscus, or phalanger.

In Nara this hide-and-seek game is played in the following manner:—A number of boys and girls squat upon their hams in a row, slapping their knees with their hands, while they sing, in time to the slapping,

Dae aena obulo ekoia
I'alona be makau makau
I'una be makau makau
Kaito Kavato o-o
Kabara-kabara be uari-uari.

They then, one by one, form themselves into two groups, after which four from each group go away and hide, and the others at a signal rush out with a cry to find and endeavour to capture, those in hiding.

I cannot give any interpretation of the above song.

Next we will take a pretty game which is known to many tribes. It is a game played on land or in the sea. It is played in the Motu, Nara, and Aroma villages, at Mailu, at Wanigela, and at Kerema in the Gulf of Papua. I do not find a note of having seen it played at Hula, but I feel sure it is a game well known to the cheerful vigorous children of that tribe. It is a rather difficult game to explain, the movement being continuous, and, as there are at least two variants of it, viz., those of Motu and Nara, which differ considerably from each other, I shall have to explain them at some length. I will first take the Motu variant of it as played by the children of Gaile village. (Plate XXVIII, Figs. 1, 2 and 3.)

A number of boys and girls join hands and stand in a row. The two at the end of the row then move forwards and inwards and pass under the uplifted arms of numbers 3 and 4. They continue circling in the same direction and thus the

end of the chain comes round to the front of the line again and the leading child, followed by the next in the row, passes under the arched arms of numbers 4 and 5. The original row of children gradually becomes a chain circling inwards upon itself, until the whole row of children is involved. Whilst this movement is in progress they all sing the following words, and these are repeated until the last eye in the row has been threaded:—

Maneva koekeli, lokua lokua.

By this time the row has become a coil. Now they all, with the exception of four of the larger children, leave go of each other's hands, and bunch up closely, facing inwards, much after the fashion of a football scrimmage. The four exceptions stand separated outside the bunch and clap their hands to the rhythm of the following chant, which all the children sing:—

Lai e mai ao gani-gani
Mini aoma Kikido baodo
Kikido baudo oma kalia
Gia tabia gulo-gulo—bago talia.

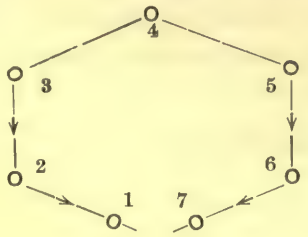
This song being ended, the four children outside rush upon the group and endeavour to push it down, and a pushing this way and that way ensues, until the whole bunch collapses and falls submerged in the sea amidst much splashing and spluttering and screams of laughter.

The meaning of the songs which accompany this game is not definitely ascertainable—the words used being nearly all strange to the Motu dialect as spoken at present. I am inclined to think that the first part of the game represented a shoal of fish, and that the circling motion is imitative of the movements of fish in shoals. The second part of the game may represent the shoal of fish huddling together under an assault of predatory fishes or birds—the latter being represented by the four outside boys. Or the four boys may represent a circular net drawn round the shoal of fish. I make these suggestions not without diffidence, for the few words in the songs, which correspond more or less nearly with words in use at the present day, give but slender support to the suggestions. On comparing the words of lost meaning used in these Melanesian-Papuan game songs with similar words taken out of a comparative vocabulary of the Polynesian dialects, I am disposed to think that the ancestors of these immigrant Papuan tribes brought with them many Polynesian words which afterwards fell into disuse.

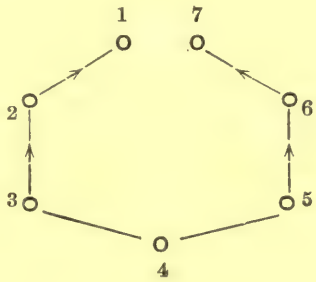
The Nara variant of the game just described is called *lavala*, signifying carpet-snake. The children playing—boys and girls—stand in a row and join hands:



The two ends advance and circle inwards towards each other, and when they meet the two end children (1 and 7) slap each other's free hand.



They then go back to their original positions in the row and circle the other way walking backwards, and 1 and 7 again slap hands.



They all have meanwhile been singing as follows :- -

Lavala pake a ito pake
Maio ini ini moi atsio
Maio daba daba ma'atsi.

These movements finished, the children go through the in and out movements of the game as played by the Motu tribe, singing this song:

Kaduia venu-venuko
Teba nina (pause) . . . . *atsi,*

which is repeated until the movement is finished. They then resume their original positions in a row, and pull outwards from the centre till the chain breaks. This done they again line themselves up in a row, and then wind into a lump, and in such formation they all sing and jump in unison—the song being:—

Ude ude tsiau tsiau,

which they repeat several times and the game ends quickly without any climax.

I have not seen this game played at Mailu nor at Aroma, but at both places the natives have told me that it is a game well known to them. At Mailu it is called *vavira*, and at Aroma *pinu-gogo*. The words of the song which accompanies the game at Mailu were given to me as follows:—

Vaviri vaviri kai kurou (repeated *ad lib.*).

The Wanigela tribe in Collingwood Bay also play a like game in a similar manner. There it is called *mogas vivirin*, and the song is merely composed of these two words sung as follows:—

Mogas vivi vi vi vi vi (*ad lib.*).

At Kaipe, in the Gulf of Papua, this game is known as *ikaroa*. The word for snake, in a general sense, is *karoa*. The same game being known in Nara as *lavala*, carpet-snake, there is probably, I think, a connection in the native mind between the winding movement in the first part of the game, and the movement of a snake. This idea is, in some measure, borne out by the word *maneva* (*vide* Motu name of this game). For in the Motu dialect *neneva* is the term applied to a zigzag or wavy tatu pattern, which obviously is suggestive of a snake. Indeed, a common sea-snake is called in Motu *koko rereva*. If space and time permitted I could give further instances of words tending to corroborate this hypothesis.

The Gaile village children have a bathing song. I did not find that it had any connection with a game. The children merely gather together in a group and with only their heads above water they sing:—

Kole Kole Kouană.
Ivili ivili Kouanā.
Ulato matana Kouană.
Kouă Kouanā.

I am unable to suggest any meaning to these words as a whole. Singly, some of them can be made out—as for instance *ivilikou*, which is the word in Motu for a flute made of a reed. *Ulato matana* means "the maiden's eye."

I was unable to secure photographs of the next two games, as the play being of a boisterous nature does not lend itself to photography.

The first is the game called *Upamaino*. It is played by the Motu tribe and at Aroma. By the latter it is called *Walio* (megapod). A suitable sandy spot is chosen on the beach, and some girls here scrape a hole with their hands, and at the bottom of it they hide coconuts, or coconut husks. They then fill the hole with sand, and heap the top into a mound, and each girl, having armed herself with a light stick or a branch, selected because there are plenty of green ants upon it (a beast that bites most viciously), they take up their position on the mound.

The competing boys who have meanwhile been standing close by with their backs towards the girls now advance to the attack. Their object is to gain the buried coconuts, and this they can only do by first dragging the girls from the mound, and then burrowing down into the sand. But this is not so easy to accomplish, for the girls stoutly defend their mound, and belabour the boys with their sticks whenever they approach. One of the boys, watching his opportunity, will dash in and seize a girl by the legs and endeavour to pull her away; he is helped by his friends, but some of the other girls go to her assistance, and a wild scrimmage follows. Meanwhile, those boys who have held back now advance

upon the mound again, and other scrimmages result. Finally the boys capture the mound, and dig out the coconuts. Then they sing:—

Upamaino tau vabina.
Kune Kune (repeated *ad lib.*).

(The words are untranslatable.)

This game is almost too rough a one to watch with pleasure, for the boys emerge covered with bruises and abrasions. But it is played with the greatest good humour and evident enjoyment. The object of the game is probably to prove the valour of the individual boys, and I expect that the coconuts are marked in some way by which the respective girl owners can be recognised.[1]

Another rough game is that known as *Dubu dubu.* A row of boys face a row of girls, the intervening distance being some ten or fifteen yards. A mound of sand, heaped up behind either party, represents a *dubu.* Some boy or girl bolder than the others advances and dares the opposite side to capture him or her. One (or more) of the latter rush upon the mocker, who tries to evade capture by getting back to his (or her) side. The opposing sides dare not venture too near each other's ground lest they be caught. But presently a girl or a boy (as the case may be) is seized, and then a tugging match ensues, in which, perhaps, there may be half-a-dozen boys pulling at a girl's legs in one direction, and half-a-dozen girls pulling at her head and arms in the opposite direction. Great is the excitement and fun which meanwhile prevails. As soon as a captive is made—viz., dragged over one of the respective lines, he or she is placed behind the victor's mound—and a song, sung derisively with jeers and clapping of hands, is joined in by the successful side. And so the game goes on—the object being for one party to capture all their opponents. At Gaile, where I saw this game played, the one side's mound was called *Mavara-dubu,* and the other side's mound *Babaka-dubu.* The song of the latter was:—

Emai dubu Babaka-dubu
Eni vaita

and the opposing side sang the same words, except that it substituted *Mavara-dubu* for *Babaka-dubu.*

To explain this game fully would take too long. Briefly it is this. Under the social system obtaining with the Motu tribe, the people of each village are split up into clans (*iduhu*) and these clans are grouped under one of the several *dubus* of that village, and the *dubus* therefore are representatives of the collected strength of so many clans. Councils of war; councils of feast-giving; and all other matters of importance affecting the clans are held on the platforms of the *dubus,* and there is a good deal of rivalry between them, especially in the matter of the inter-*dubu* food festivals—each *dubu* endeavouring to outvie the other in the prodigality of food exposed at the periodical feasts. It is this rivalry which is expressed by the game of *dubu dubu.*

[1] The Aroma people informed me that the coconuts represent the eggs in a megapod mound—the game there being named after the megapod.

There are two *Mavara-dubu* at Gaile village, but no *Babaka-dubu*. At the neighbouring village of Tupuseleia there are two *Babaka-dubu*. I am not aware whether Gaile ever possessed a *Babaka-dubu*, which subsequently became extinct or absorbed. It is not improbable.

The same game is played at Aroma and at Hula. There is also an interesting variant of it played at Wani-gela in Collingwood Bay—interesting especially because it affords a connecting link between the totem and *iduhu* systems.

The Wanigela tribe, as well as some of the Cape Nelson tribes, have bird totems. Their totems are inherited from the fathers—not from the mothers. (So also are the *iduhu* inherited in the paternal line.)

The game is called *Manubed*, signifying fish-hawk. The positions of the two opposing sides are taken up opposite each other as described in *Dubu dubu*. Then all of one side advance towards the other, which remains stationary, and say "See! the fish-hawk has caught a fish." At this they look upwards, and then the side, which has been stationary, rushes forward and endeavours to capture the members of the other side, whose object is to evade capture by regaining their boundary. If captured they become forfeit to the other side.

I must mention here that for the descriptions of the Wani-gela games I am indebted to Mr. Penny, the Anglican missionary stationed at Collingwood Bay.

I will now describe a girl's game which is known to many tribes in New Guinea. It is a quiet little game, and apparently it is without meaning of any sort. None of the children who played it, nor any of the grown-up people, could give me a vestige of an idea as to the origin of the game. But inasmuch as it is a favourite game, and one widely known, I cannot omit it. The game has three phases and it is played thus:—Four girls or more sit upon the ground in a circle facing inwards. They then place their hands as shown in the photograph (Plate XXVII, Fig. 4), each girl nipping with forefingers and thumbs the skin on the back of the hand next to her. They then move their collected hands up and down in unison to the rhythm of the following song:—

Kinimala Kinimala
Lepa lepa maloa taitu
Kepa Kepa anaurio
Melaule malare palaia.

The song finished they leave go of each other's hands and drop them limply in a heap.

PHASE 2.

The hands are placed on each other alternately, palms upwards. The girl whose one hand is at the bottom draws that hand out, and places the index finger of it with a downward pointing motion in the palm of the girl's hand which is uppermost, saying these words: *Budu budu ta ia seranai.* She then with that hand takes hold of the lobe of the ear of the girl next to her. This they each do

in turn with the result that each ear lobe is being held by another girl's hand. Then they rock backwards and forwards, to the following song:—

Ivili boto Kaia boto
I—i—i—i—i

ending with a prolonged note on *i*, and at the same time bend down and put their foreheads together. The prolonged *i*, which is uttered, ends with a merry laugh.

Phase 3.

Each girl clasps the forefinger of her left hand in the palm of her right hand, and they place their hands thus held one upon the other. The collected hands are then moved up and down to the rhythm of this song:—

Au bada kere-kere nadi bada kere-kere
Aita-ta koroni-koroni.

At Tupuseleia the words of these songs vary somewhat from those used at Gaile, the latter being the ones just quoted. The words of the first song remain the same, but the *Budu budu*, etc., in phase 2 become

Budu budu kaia sese.

and the succeeding song in the same phase is longer, thus:—

Au auna kiaka pa
Bika bikana kiaka pa
Laro laro paiari paiari
Iviri boto kaia boto
I—i—i—i—i.

The last song is also changed to

I kove kove akove kove
Aita-ta koroni Koroni.

As far as I can make out, the words in the above songs appear to be utter nonsense.

At Hula I found that only the two first phases of this game were known. The songs were:—

1st phase.—*Kinimale lekwa lekwa marawa*
Keta keta anagolia ne laule ne laule polaia polaia

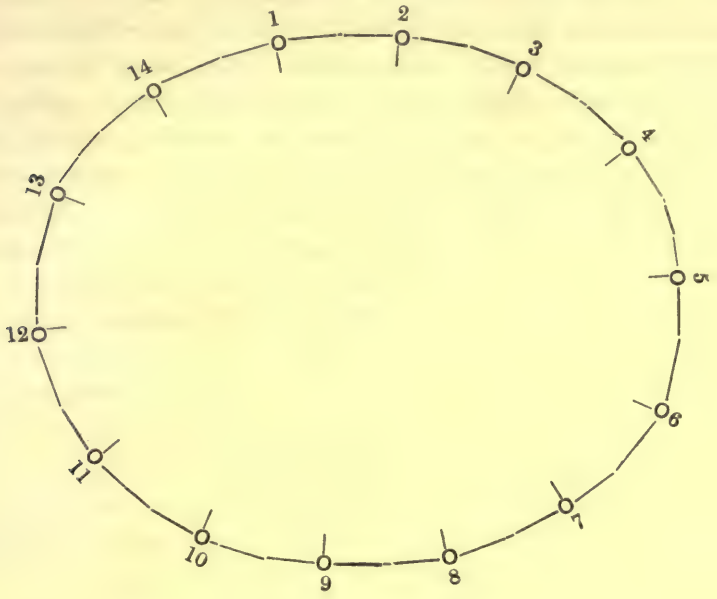
2nd phase.—*Kapa laule laule maleve ahiana gorigoana Karigamai.*

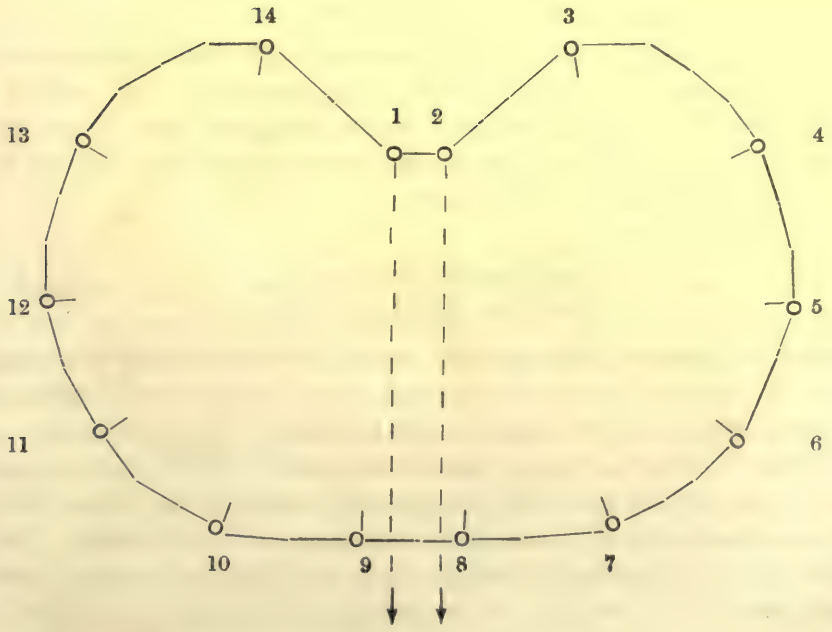
The same game is also played at Mailu and at Wanigela in Collingwood Bay.

A pretty game is played by the Motu and Hula children. By the latter it is known as *Aikini*. I regret to say that I have lost part of my notes referring to this game, and therefore can only give the song which accompanies the game.

Aikini aikini ugauve ugauve keleai
Okapu kapūna nakele kwatuana
Loa pekato, e laurio, loa pekato e laurio ekeperio
Lauri lauri kepere kepere, lauri lauri kepere kepereo

Another Hula game is called *Kwaito pino-pino.* It is a vigorous game and delightful to watch. It was always a pleasure to see the Hula children at play, they throw themselves so heartily into their games. The method of playing *Kwaito pino-pino* is this:—A number of children—boys and girls—form a circle facing inwards and holding each other's hands. I will assume there are fourteen children playing. I must describe what follows now by means of diagrams.





The third figure will be the same as the first, but the children will now be facing outwards instead of inwards. While this movement is in progress they sing or rather say:—

marugeno ara wana anakwaito
pino-pino kwaito pino-pino.

This done they begin running round with increasing velocity until at last the chain breaks with the strain, and one of the children at the broken point is sent flying off at a tangent, a flight which usually ends in a head-over-heels fall.

Another Hula game, which is also played by the Nara children, is called at Hula *Mota reremto*, and at Nara *Boroma*. At Hula the game is said to represent the enclosing of a big fish in a net, and at Nara the enclosing of a wild pig in a net. These two games are a good instance of what I alluded to earlier in this paper—viz., the tendency of a people, who, formerly a coast-tribe, are afterwards forced inland, to adapt their games and other matters and objects pertaining to their former mode of life to their new environment. Thus do fish become wild pigs and fish-hawks become horn-bills, and not infrequently the original name of an object is adopted when the transfer is made. This is an important point to remember when studying the ethnology of Papuan tribes. With the exception of the words of the song, the method of playing the game mentioned is much the same at Hula and Nara. A short description of the latter will serve for both.

The children form a circle and take a firm hold of each other's wrists with the usual linked grip. A boy squats in the middle of the circle. The circle moves slowly round the boy and the following song is sung:—

Davani ina ka eva evala
Ono paiva ni ina ka eva evala
Lania laniabenene akoimu vida.

At the end of the song the children give a musical little hoot, whereupon the boy in the centre hops on his hams and faces the opposite way. The verse is then repeated. When it is ended, they stop circling and stand fast. Then the boy stands up and charges at different parts of the circle trying to break through it. In doing so he does not make use of his hands.

This is the Hula song:—

Variva reremto mota timu
Variva timu bekulu oa waiau.

I am unable to throw any light upon the meaning of either of these two songs.

There is a rather tiresome little game played by the Nara children called *Uduve-Uduve*, which is the word given in that dialect to a kind of bush-rat.

The children stand in line one behind the other. The boys hold a strand of the girls' *ramis* and the girls hold the posteriorly hanging end of the boys' *sihi*. Two boys face each other at a short distance clasping each other's hands. The line of children slowly advances with mincing step and serpentine course, crouching, meanwhile, towards the two boys, the line passing underneath their upraised arms.

They lower their arms suddenly when the last child of the line is passing, and enclose her within them. She (or he) then passes out of the game. The line returns as before, and so they go on until all have been captured. The following song is sung throughout the game :—

Uduve uluve evana uvana
Popouda umanai kivio kivi

(*Popouda* is said to mean a small variety of dove).

It is probable, I think, that this is the survival of a more eventful game. It seems to represent the trapping of an animal. The hill-tribes who now inhabit the inland hill-country, whence the Nara tribe made their last migration, are unusually skilful in catching, in an ingeniously contrived form of trap, the bandicoots and a prodigiously large species of rat which abound there.

Another game called *Odolo* is played at Nara, which I have not found elsewhere. The word *Odolo* signifies in the Nara dialect megapod. It will be remembered that one of the games known to the Aroma tribe is called megapod, but the two games are wholly dissimilar. This Nara game consists of four phases.

1.

A number of boys and girls sit in a row upon the ground with legs parted and extended, each child's feet touching the foot of the adjoining child.

A boy and girl face the row, she on his right hand, he holding her index finger. Beginning at the right end of the row (their right), they stroke the ground backwards and forwards with their feet on each side successively of a joined pair of legs (the pair of legs being the right leg of one child, and left leg of adjoining child). Meanwhile the two stroking children sing :—

Dava odolona kadalo daloa
Bono bono odolona kadalo daloa
Odolo mai diva odolo mai dai
Murinai alona ketoto katoto
Imamuna akua au.

2.

The same children remain seated in the same row, and the boy and girl pass behind each child successively and swing their arms (his right, her left arm, hands being joined) backwards and forwards over the head of each child, singing meanwhile :—

Dai la laka kele kubuna
Oa laka kele kubuna
Oa divo divo oa dai dai
Sinane e akua, moika moika
Kamana e akua, moika moika
Ivoge avoge akua'a.

3.

The boy and girl begin at the end of the row again and lift up each child in succession by the arms and legs, the boy at the child's head, the girl at the foot, and swing him (or her) sideways, singing :—

Ono ono bido bido
Ono isi bido isi
Kelele madodo, voisi voisi.

4.

The boy and girl return to the end of the row, and lift each child in succession, he taking hold of a hand and foot of the child, and she doing the same, and swing him (or her) backwards and forwards, singing :—

Neme oini arova gena
Isia owo amu vapa'i
Lalo lalona vao dedea ania.

I do not find in my note-books any allusion as to the possible meaning of the words in the foregoing songs. I may, however, call attention to the likeness of some of the words to those sung in the Motu variants of the game called *Bido-bido.*

This completes my knowledge of what may be termed co-operative games played by the children on the South Coast of British New Guinea. Other games there are of which I find incomplete notes—too incomplete to enable me to describe them. As regards those games which I have attempted to portray, I regret that I have not been able to do more than present a rough outline sketch of them. The difficulty of ascertaining from primitive man the possible sense of his archaic songs is such that those only who have attempted it can realize. The barbarian seems unable to comprehend that they ever had a meaning. Century after century they have been repeated by rote until the words have lost form and individuality. The native cannot say with any degree of certainty where in the songs these archaic words begin and end. The difficulty is complicated by the probability of many of the words being mere nonsense. What answer should we give if a tiresome Papuan ethnologist were to enquire of one of us the sense of the words "*Fee fo fi fum !*" or of "with a hey ho roly and spinach !"

Before I conclude I must briefly enumerate a few minor games in which songs have no part—games played by children singly.

1. Wind-mill. In much the same manner as European children make a wind-mill out of paper and fasten it on the end of a stick, so do Papuan children fashion a wind-mill out of strips of coconut frond. (General).
2. Spinning a disc of shell threaded on string through a hole pierced in its centre, by winding up and then pulling tense. The shell makes a buzzing noise in spinning. (Motu.)



FIG. 1.



FIG. 2



FIG. 3.

STRING FIGURES.

CHILDREN'S GAMES IN BRITISH NEW GUINEA.



FIG. 1.—PILE HOUSES WITH CHILDREN.



FIG. 2.—PAPUAN CHILDREN.



FIG. 3.—GIRLS' GAME.



FIG. 4.—GIRLS' GAME.

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FIG. 1.—VAVIRA.



FIG. 2.—VAVIRA.



FIG. 3.—VAVIRA.



FIG. 4.—BIDO BIDO.

CHILDREN'S GAMES IN BRITISH NEW GUINEA.

3. Bounce-ball. The balls are made of the long cellular stalks of a kind of water-lily, these being wound into rough ball-shape. The elasticity of these balls is remarkable when fresh made, but is lost by degrees as the vegetable matter decays. (Aroma.)
4. Object drawing. A favourite pastime of children, who draw spirited representations of ships, animals, fish, human beings, hunting incidents, etc., with charcoal. The sides of canoes hauled up on the beaches are the surfaces usually selected to draw upon. (General.)
5. Sketching tatu marks. This is only practised by girls. For pencil they use a blunt piece of wood, and with this they trace upon their skins the marks applied in tatuing. When the skin has dried after sea bathing is the time generally selected for this pastime, the marks shewing then more distinctly.
6. Mimic dancing. Young children solemnly mimic the dancing postures of their elders, beating, meanwhile, any handy article which gives forth a sound more or less remotely resembling a drum.

INTRODUCTORY NOTES ON THE TOYS AND GAMES OF ELEMA, PAPUAN GULF.

By the Rev. J. H. Holmes,
Local Correspondent of the Royal Anthropological Institute.

Toys.

1. *Ball-tossing.*—A game common to the young people of both sexes of all the Elema tribes is ball-tossing.

The names by which the game is known amongst the respective tribes are very dissimilar, but it is interesting to note that, as far as our research has gone, the native and primitive balls used to-day in this game are probably an evolution from a more primitive ball, viz., the bladder of pigs and other animals.

The game is known to the Toaripi tribe as *ipa*, "bladder"; the Morea-ipi tribe speak of the game as *puahoa*, the term in their dialect for "bladder."

As in the dissimilarity of terms by which the game is known in Elema likewise in the make of the balls used in the game there is very little resemblance in the materials adopted. The Toaripians procure a hard nut, resembling in size and hardness the betel-nut, known as *ferehae*, which is obtained from a bastard-palm of that name, and on account of its shape and hardness it is adopted as the centre of the ball. Having procured the *ferehae*, a large number of fronds from the same species of palm, and known as *soe*, are picked and tied end to end in reef knots until the requisite length is provided.

With this primitive strapping the *ferehae* is wound tightly round and round by the boys until they have succeeded in making a ball the size and hardness they require, usually of the size of a cricket ball.

The Morea-ipi boys expend less time and trouble on the balls they make for this game, and they do not seem to attach importance to the game itself, as a season game, as do the Toaripians.

A piece of the stem of the nipa palm, when dry, of the size of a large egg, is cut out to form the centre of the ball, and this is bound tightly in dry banana leaves with the result that an unshapely ball is made.

The ball game is strictly a season game with the Toaripians, *i.e.*, they play it as a game only during the *saravera* season, that is from the end of April to the middle of June. The Morea-ipians play it at any time and never very enthusiastically.

With our present knowledge of the game as played by the respective tribes of Elema it seems unlikely that any rules are observed; the object of the players

is to keep the ball bouncing upwards as long as possible, and when it falls to the ground there is a rush for it that it may be tossed up again and kept going with a zest proportionate with the enthusiasm of the players.

2. *Apo seika.—Apo seika*, literally a small bow, resembles in size the toy bows used by boys in the rural districts of England. It is the ambition of all the small boys to possess a toy bow and a set of arrows. These bows and arrows are usually made by the fathers or male guardians of the boys, and a pliable wood named *para* (Toaripi), *elele* (Morea-ipi), is procured for this purpose; occasionally split bamboo may be used for the bow. The bow-string is made from a strip of the rind of rattan cane, and the arrows are usually very sharply pointed midribs from the frond of the sago palm, or, when the boy is getting a big lad and capable to make and discharge a larger arrow, a light wood is used which he whittles, with a knife—if he can get one—or an oyster shell, to the shape and size his fancy suggests.

As a small boy, and whilst he is content to use the midribs of sago palm fronds as arrows, he finds his pleasure in discharging them aimlessly, but on becoming a bigger boy he also becomes ambitious to compete with boys of his age, and sides are then formed; coconut husks are used as targets, and each boy strives to place the largest number of arrows into the target at a distance fixed by the competitors and increased as thought advisable.

This pastime gives a deal of pleasure, but it is considered by the boys to be inferior to shooting at soft objects buried in the sand. When this kind of shooting is adopted, a sweet potato or taro is buried in the sand, and the boys, standing at a given distance, aim for the hidden object; the best shot being the boy who succeeds in getting the most arrows into the buried target.

Apo seika as a game or pastime is general among the boys of all Elema tribes, but is, probably, more appreciated by the boys of the Morea-ipi tribe than by the boys of their kindred tribes; as a competitive game the Morea-ipi boys have certainly developed it in many ways unknown to, or at least, not adopted by, the boys of neighbouring tribes.

3. *Opi.—Opi* is the name of a hard nut which resembles in size and shape a large acorn. It is picked when green and a midrib of the frond of the coconut palm is passed perpendicularly and vertically through until about an inch of the spindle protrudes at the lower end on which the top spins. At the spinning or upper end about 6 inches of the midrib is left, thus providing sufficient to spin the *opi* or primitive top by chafing it between the palms of the hands to give it velocity.

Opi is also the Toaripi name of the game; the name by which the top and the game are known by the Morea-ipi tribe is *porohae*. Top-spinning is indulged in by the lads and young men of all the Elema tribes as a pastime for individual amusement, but it is oftener played competitively with the same object as boys have at home, viz., to ascertain whose top will spin the longest period. When played in this way, each competitor provides himself with a scraped out

piece of coconut shell in the hollow of which he spins his top. When the shells have been sufficiently scraped to provide a smooth surface, the competitors seat themselves in a row and await the signal "*ma, ma, ma!*" The significance of this monosyllable is not yet known other than as an abbreviation of *mapuso* (water), but it is daily used as a call to the pigs when the women wish them to come home to feed.

The season for top-spinning is usually from October to the end of the year among all these tribes.

4. *Ori.*—*Ori* is the name of the kite made by the Elema tribes; the same term is the general word for bird in all the dialects of these tribes.

There seems to be no fixed design or pattern of kite, the only object being to make something strong enough, yet light enough, to soar as high as wind and string will allow.

The frame-work of the kites made by the Toaripians is usually strong, thin strips of rattan cane, covered either with dressed paper-mulberry cloth or with the sheath fibre thrown off by the young palms of coconut trees.

The kite is known by the same name, *ori*, by the Morea-ipi tribe, but its frame-work is made somewhat differently; for rattan cane the midrib of the nipa palm is substituted and covered with coconut fibre, but with so little care that these kites are inferior to those made by the young men and lads of the Toaripi tribe.

The kites are provided with tails, usually a long piece of native twine with strips of dead banana leaves knotted into the twine. The kites when finished, display more ingenuity than art, and are as primitive in design as they are in construction.

Whilst the kites are made by the big lads and young men of the respective tribes, young and old of both sexes share in the pleasure and excitement of flying them when the south-east monsoon is at its strongest. The cord used for kite-flying is native made; when enthusiasm is high the kite is allowed to soar proportionately high until it gets nearly out of sight, and sometimes it is intentionally set free.

5. *Kekesi* is a toy very like the paper windmill English children play with. The boys make these themselves from pandanus leaves. [Captain Barton (p. 278) refers to this toy; I obtained one at Hula, where it is called *make*, and at Mawatta the same toy is known as *ve*.—A. C. H.]

6. *Hockey.*—A game closely resembling hockey is played by the young people of all the Elema tribes, but it is probably more highly appreciated and more skilfully played by the young people of both sexes of the Morea-ipi tribe than by any of their kindred tribes. The Toaripians name this game *tola fare toai*, literally, to hit, drive, or knock the fruit or seed of a tree which is used as a ball in this game.

The Morea-ipians name this game *kora hae kvaki*, which, when translated, has the same meaning as given above, but unlike the Toaripians, they make it a season game; *i.e.*, they only play it during the north-west monsoon season, from November to the end of March, when a hard nut, in shape and size not unlike

a duck's egg, named *hia*, is obtainable. The Toaripians have no fixed season for this game, but seem to play it whenever it strikes their fancy, neither have they any particular nut associated with the game.

Another point of difference is noted in the kind of driving-sticks used in playing the game. The Toaripians use straight sticks, usually of a wood named *hauta*, and preferred for its lightness; failing this particular wood, any other light stick available is used; the Morea-ipians also prefer a light wood for their driving sticks, and always provide themselves with a wood named *koai haru*, but all their driving sticks have a curve at one end very like the wooden driver used by golfers at home.

To play the game, sides are formed, and goals are fixed, the object being to drive the ball beyond opponents' goal; this being achieved, the victors cheer lustily and the defeated side takes defeat sadly, but with sportsmanlike courage demands another game with the hope of equalising success.

No change of sides is made for the return game, and, as in most of the competitive games of these tribes, no notice seems to be taken of inequality, in size or number, of competing parties; onlookers help either side as the game progresses, generally the winning side. The Papuan will need to evolve to a much higher plane of manhood ere he can adopt the true sportsman's precept of "give and take."

7. *Toy Canoes.*—The boys of Elema derive much pleasure, during the north-west season, from making and sailing toy canoes.

These toy canoes are models of the canoes in daily use by the respective tribes of the district; hence it is that the boys of the Toaripi tribe make their toy canoes to represent the double canoes in common use by their own people, whereas the toy canoe of the Morea-ipi boys is a model of the outrigger canoe which is, by the way, of comparatively modern adoption by their tribe. The *loti vaki vaki* or *loti seika*—Toaripi names for their toy canoes—of the Toaripi boys, is a fair sample of the workmanship and skill displayed by the boys of all these tribes; their ability to imitate is marked in the manufacture of all their toys, but utter disregard for strength and durability characterises all they do as boys, and much of what they do when they become men.

The stem of the nipa palm is used for the hull of both kinds of toy canoe, double and outrigger, and is so shaped as to distinguish the bows from the stern; the upper or deck part is trimmed to make it flat, but not hollowed, and the whole of the outside is bevelled slightly from the imaginary gunwale to the keel, thus giving the hull a canoe-like appearance.

To make a double canoe, two pieces of the nipa palm stem are cut in equal lengths and skewered together, just below the deck line, but at an equal distance apart, that the desired space between the two canoes may be obtained. The hard stem of the sago palm frond is used for skewers or crosspieces, and in addition to the usual number required, according to the length of the model, to hold the two parts of the hull together, two of these skewers are put across at the stern end, so

closely as to leave only space enough between them to permit of a small piece of wood being put in to act as an automatic rudder.

A platform, of thin strips of the nipa palm stem, is laid from beam to stern, and in this platform the sago palm stems are stepped as masts, in such number as the boy builder fancies. The sails, palm fronds of any kind, are bent to the masts prior to stepping them, *i.e.*, the masts are passed longitudinally through the frond sails, consequently no binding or lashing is required.

The materials used, and the method of construction pursued in making a toy double-canoe are, in the main, the same, and almost uniformly adopted by the boys of all the Elema tribes; such differences as exist are limited to the particular model adopted.

The hull of the outrigger canoe has only one canoe, and as a toy canoe, its outrigger is not a correct copy of these canoes, as it has only one arm and a float at its far end stuck on in any fashion, whereas the outrigger canoe of daily use has much attention devoted to its outrigger, and displays much skill in native lashing.

8. *Musical toys.*—In designating these toys as "musical," it will be assumed that the writer is endeavouring to represent what they are to the Elema boys, and not what they might prove to be to a people of a higher civilisation.

These toys are few and very primitive. The most primitive is probably the mouth-organ, which is made by doubling any kind of leaf, and so placing it between the lips that the edges of the bent leaf rest on the teeth. By blowing gently outward and into the hollow of the leaf, a squealing noise is produced, or what may possibly be a musical note to the boys who produce it.

Another primitive instrument, made by the boys of all the Elema tribes, is the flute. It is made from a piece of bamboo, about 18 inches in length, and 1 inch in diameter. The interior partitions of the bamboo are forced through when the bamboo is green and soft. A hole may, or may not, be made about 2 inches from one of the ends; when it is made in that position, the performer blows into it, in much the same way as is done by more highly qualified flautists. If this hole is made, it is the only one made diametrically in the bamboo; the Elema flautist has a supreme disregard for notes other than he can produce either from the hole, when made, or from blowing into his flute at one end by so placing that end that it may have the under lip as a cushion, and the upper lip free to cover as much of the hole as he deems necessary.

He has not yet evolved to that stage of appreciation which would enable him to distinguish the respective modulations of notes, hence he has not felt the need of making any effort to produce them. The foregoing native toy instruments are made by all the lads of all the Elema tribes, but the *kavakava*—the Haura name for Jew's harp—is made by the bush tribes only of this district.

I will endeavour to describe one I have in my museum. It is made from a piece of bamboo which was carefully split in half. The half from which it was made measures, from end to end, 11¼ inches. Its diameter is 1½ inches.

At one end which, for convenience of description, we will term its "intact end" (for such it is apart from a hole in it, to which we shall ultimately refer, and a few scratches by way of ornamentation or sign of ownership), a length of $1\frac{3}{4}$ inches has been reserved, and from it the medial line seems to have been carefully traced to the other end of the bamboo. This medial line, proceeding from the intact end, is maintained to within an inch of the other end and cut off. From the intact end continuous fissures are made at equal distances along the remaining length of the bamboo, until the medial line is left as a tongue.

In appearance this primitive musical toy closely resembles an old-time fork of three prongs, having its outer prongs of equal widths and lengths, and its centre prong shorter and a shade narrower at its wider end and at the other end tapered to a point.

Through the hole in the intact end a piece of string, after being knotted at one end, is passed. With this twisted around his thumb and the other end of the instrument, with its hollow side inwards, placed horizontally between the performer's lips, by rapid twitching and jerking of the string a vibration of the tongue is produced and with it a sound not unlike that which comes from toy jews-harps at home.

Games.

If the children of Elema have not many toys, they certainly have an almost exhaustless stock of games, but we can only select a few from their stock for this paper.

1. *Ikaroa.*—*Ikaroa* is the generic name for snakes in all the dialects of the *Ipi* tribes of Elema.

Boys and girls play this game together. A ring is formed by the players joining hands after it has been duly arranged that the boys and girls are equally and alternately placed that each one in the game has a partner of the opposite sex. The ring being thus formed, one of the party begins to chant the following words in which all present join :—

"*Ikaroa uki lailai makeko,*
Seuseu haro, seuseu makeko,
Ua sisi, mako sisi, ikaroa."

Whilst chanting these lines in a monotone, the party swing their locked hands forward and backward until the last word is chanted, when they quickly release hands, change partners, re-form the ring, and proceed again as above described.

No one seems able to translate these lines, notwithstanding many of the words are in every-day use.

2. *Hohore.*—*Hohore* is the name of the Toaripi game of "hide and seek," which is played by the children of all the Elema tribes much in the same way as it is played by children at home. Two sides may be formed, one to hide, the other to seek, or it may be played by blindfolding one of the party as "blind-man's buff" is played at home.

When the latter form of the game is played, it is usual to begin chanting whilst the individual is being blindfolded and to continue the chant "*hohore mora keikei; mai keikei hohore,*" until the object is found.

3. *Helau heleiki vie* is the Morea-ipi name of a game played by the small children of both sexes of this tribe, also by the children of all the *ipi* tribes of Elema, but known by different names by the respective tribes. With our present limited knowledge of child-life in the Gulf of Papua, this pastime, played during the north-west season, is quite unintelligible to us and unlike any game with which we are acquainted, but it affords the children of Elema amusement and delight difficult to describe on paper.

Prior to playing it, a table or stand is made on the beach. It has four legs, sticks about an inch in diameter, which are driven into the sand a depth of about 6 inches. About an inch down from the upper ends of these legs, cross sticks are lashed, and on this skeleton frame-work strips of sago bark are placed; the structure thus completed stands about 3 feet high, 4 feet long and 2½ feet wide.

The game itself takes the form of an unintelligible dramatic display. Little boys and girls take up their positions about the table and begin to dance, sway their bodies to and fro, and chant the following words:—

"*Auaua lei tiri maula,*
Tivara, tivara tarapove,
Tari vaiva ivavuku terotero,
Tati vaiva ta, tati vaiva ta."

Whilst swaying their bodies sideways and chanting the above lines, the little girls take in their hands the front part of their grass petticoats and flounce it continuously forward and backward; whereas the little boys content themselves with chanting and swaying their bodies and gesticulating with their hands.

The significance of this game is not known to the children or to the parents; the words of the chant do not give a satisfactory clue, but a fuller acquaintance with the dialect of the Morea-ipi tribe may yet enable us to trace in it a valuable bit of unwritten native history.

4. *Swings.*—No pastime affords greater pleasure to the lads and young men of Elema than the swing, and unlike many of their pastimes, it is practised alike by the *ipi* tribes on the coast and the *au, u* and *ra* tribes of the Elema hinterland. In every case the common object is gained, viz., the excitement derived from swinging through space, but the construction of these primitive swings is interesting and illustrative of the evolution of the swing.

The most primitive type of swing yet known to us in Elema is the one used by the Opau tribe residing a few miles inland of Kerema Bay.

A coconut tree or any other tree which overhangs a river or creek, is selected, and to it, at a considerable height from the ground, one end of a large and strong piece of rattan cane is suspended that its lower end may reach down about 3 feet from the ground. The swing is then complete and the excitement begins.

The *ikauka* or swing of the Morea-ipi tribe, residing at Orokolo, is a slight

improvement on the above. Two trees, having a considerable lean toward one another, are selected, and, at a good height from the ground, a length of strong rattan cane is carefully tied to each of the two trees, at such a distance apart that when suspended the respective lengths are comfortably near one another at the lower end to avoid any inconvenience when being used as a swing.

The Opau lads, when swinging, set themselves going; not so with the Morea-ipi lads. They take it in turns to give a send-off, and in this way; the individual, who has established his claim to the next swing by being first to seize the ends of the rattan cane, asks someone to give him a send-off, in other words one of the party stands between the suspended lengths of the rattan cane, crosses his arms by resting each elbow in the palms of opposite hand, so that his crossed arms may reach just below his chest. The send-off being taken from this human pedestal, the individual swings forward and backward with increasing velocity until he thinks he has attained sufficient force or rapidity to enable him, on the forward swing, to jump off and toe a mark beyond that made by his compeers.

The *peroki*, or swing of the Toaripians, so closely resembles the swing seen in local tea-gardens at home, that one may be inclined to think that the idea of its construction must have been taken from the suggestions of a foreigner, but the natives claim it as being their own from time immemorial.

The Toaripians require only one tree having a considerable lean over as, just above the bend of the tree, they lash horizontally a strong piece of wood. To this horizontal arm, about midway, they suspend the rattan cane by making a kind of noose knot, so that the cane, when suspended, may be in equal lengths. A seat or platform is then provided by placing the ends of the cane through the respective holes—bored about 6 inches from each end of the seat—of a piece of flat wood previously obtained and bored for this purpose. To secure the seat the ends of the cane, if long enough, are knotted, failing that, they are split, brought up over the seat at opposite angles and spliced to the main lengths.

In swinging, the Toaripians stand or sit on the seat, but with them, as with the Morea-ipians, the competitive spirit dominates, and each individual tries to make the longest jump from the swing when it is going at its swiftest.

5. *Asi.*—A large number of boys is needed to play this game properly, and they should be of varying height, so that the tall boys in the middle may easily be seen above the small boys of the outer circle. The arms of the boys are interlocked in such a way that when several of the boys wish to push in a particular direction they can combine their strength for that purpose. When all is ready, one boy, who acts as captain, sings out, "Look out! here comes a westerly squall." At that moment all the boys on the west line of the circle push with all their might. If they succeed in causing the opposite line to roll over, they claim that the westerly squall has wrecked the canoe. If they weather the westerly squall, the captain shouts, "Here is a south-east wind." And so they go on till they determine which is the strongest party on the *asi*, or canoe.

6. *Isukakaroai.*—This is really a contest of diving and swimming under water.

Two sides are formed and the best swimmer under water of one side dives first ; he has if possible to swim beyond the line of the other side. If he fails the best man of the opposing side makes the attempt, and so it goes on till the best side wins.

7. *Koa* is a game played only by very small children ; having made pinnacles of sand on the beach, they make sand-balls and knock them over. [At *Hula* I saw small children making erections of sand on the beach.—A. C. H.]

8. *Lavi.*—This game is played in two ways: (1) as described by the late Rev. J. Chalmers in *Pioneering in New Guinea* (p. 183). (2) A number of boys stand with bent backs in a long line, the second boy having his hands on the shoulders of the first, and so on to the end of the line. The fun comes in when the end boy has to climb on the back of the one in front and walk erect along the line of arched backs without falling off. If he succeeds he escapes being walked over. So it goes on till the boys are tired or the game is played out.

9. *Muru.*—This game represents a woman going to her stack to get wood, and in doing so she is attacked by ants. A number of boys place their hands one on the other so as to form a stack of hands. This game is always played near to women's quarters, and there never fails a woman with a heart young enough to join in and give the boys pleasure. The stack of hands being raised the woman goes to get wood, and pulls at one or two hands, remarking what a grand pile of wood she has. Suddenly all the hands are freed, and the youngsters jump, buzz, and climb on the woman's back, and she escapes the best way she can, screaming, and shrieking that the ants are attacking her.

The foregoing notes on "Toys and Games of Elema" embrace all the toys known to the children of Elema, but they have a score or more of games which, for lack of time and a limited knowledge of the same, I am unable to include in this paper.

NOTES ON CHILDREN'S GAMES IN BRITISH NEW GUINEA.

By A. C. Haddon.

[With Plate XXIX.]

It is with some diffidence that I offer the following supplement to Captain Barton's paper (*supra* p. 259), as my knowledge of British New Guinea is so very much less than his, and the time I spent on the mainland was so extremely limited. Through the kindness of Mr. S. H. Ray I am enabled to add his observations on games, *korio*, played by children at Saguane, Kiwai Island. The records of the songs of the games were made mainly by Mr. Ray, and the translations are entirely due to him. The latter naturally are quite tentative, and are the best he could accomplish under the circumstances. He recognised at the time that some of the words were very obscure, and that the natives themselves did not appear to understand them. I have thought it best to publish all the games written in my note books, although some are mentioned by Captain Barton, and I have added all our songs, which were written down according to the best of our ability at the time; where discrepancies occur from Captain Barton's versions, we bow to his superior knowledge.

A number of Motu and Motumotu games are very briefly described by the late Rev. James Chalmers in *Pioneering in New Guinea* (1887) pp. 182–184. Most of the games described below were mentioned in *Head-Hunters, Black, White and Brown*, 1901. One or two of the games have English parallels.

Linear games.—A large number of boys form a line by clasping the wrists of their neighbours. One end then swings round, and the front boy, followed by all the others, passes between and under the arms of the two boys of the other end, each pair of boys is threaded in this way in succession, when this was finished the order was reversed (Veifaa, in the Mekeo District).

Mr. Ray saw a variant at Saguane, Kiwai Island, which is called *Parea* (? "Sea snake"). A number of boys stand in a line holding hands, the first boy twists himself under his own left arm and the right arm of the second boy, he then passes between boys two and three and number two twists himself round. Boys one and two then pass between boys three and four, the former of whom twists round in his turn and so on, thus winding up the line. When this is finished they unwind. All the time they sing:

Doropi woti.—Body twists.

Doropi dramido.—Body swims.

Also at Veifaa there is a game something like our "Oranges and Lemons." Two children stand opposite one another and join hands, holding them up very

high. The object is to cut off the last of a string of children who run round and through the arch.

Ring games.—At Hula we saw a number of boys form a circle by catching hold of each other's hands, facing inwards. Two of them run into the circle and under the arms of two other boys; when all the others have done the same the last two twist themselves under their own arms and the circle is now complete again, but all the boys face outwards. They then revolve sideways as fast as they can, gradually accelerating their speed till one boy tumbles down.

During this game they sing:

Maru gĕno o ana
Kwaito o pinupinu o
Kwaito pinupinu ai!

The first phase of this game is called *Maki*, and the second *Kwaito pinupinu*. The first word may be connected with *kwado*, "make holes"; the second is "grub up" (as a pig). This game is also described by Captain Barton (p. 275).

A variant of the second phase of this game was observed by Mr. Ray at Saguane. It is called *Keregediuti*, "falling." A number of boys form a ring, all facing outwards and holding each other by their upper arms. They swing round and round, and pull till the ring breaks.

Mr. Ray describes a game called *Otara-oriboa* at Saguane. Two players are enclosed within a ring of boys. One of the central boys is blindfolded and has to catch the other boy who may not escape out of the ring.

Wheel games.—Four boys lie at full length on the ground at right angles to one another, so as to form a cross with their feet touching; usually they place a large piece of the husk of a coconut in the centre against which they tightly press their feet. A small boy crouches on their feet. Four other boys stand between those lying down; they catch hold of their hands, this raises the arms and bodies of the latter. The standing boys walk round and round (clockwise), and the whole contrivance revolves like a four-spoked wheel. This is called *Makĕ gegelaki* at Hula, where I only saw boys playing it, but at Yule Island it was played by boys and girls. (Plate XXIX, Fig. 1.)

A very simple version of this game was seen at Veifaa. Two boys took hold of each other's hands and, putting their feet together, lent backwards and then turned round and round.

Another revolving game played at Hula is called *Rapurapu*. Four boys sit on the ground and interlock their legs in the form of a square in such a way that the instep of the right foot hooks over the pit of the knee of the boy to the right. They then stand up and hop round and round on the left foot, clapping their hands rhythmically and singing:—

Rapu rapu tabai manu
Roroiatĕ atĕ atĕ
Roroiatĕ bada raita
Eaiimo eai eaiimo

Balancing games.—At Hula and Elevara we saw the game mentioned by Captain Barton in footnote 3, p. 266. (Plate XXIX, Fig. 2.) For this game I obtained the name of *Evanena.* We saw the similar game, in which the boy lies down and is jerked forward, at Elevara, where it was called *Omoro,* or "frog." Mr. Ray also saw this game played at Saguane where it is called *Mere kerememberetsi,* "boy-throwing." These, and most of the other games here recorded, were published by me in *Head-Hunters, Black, White and Brown* (1901, pp. 224–231, and *cf.* Index, "Games").

Another balancing game is played at Elevara and Yule Island by a number of boys standing very closely together, one in front of the other, so as to form a line; each places his hands on the shoulders of the boy in front, the arms and body being flexed. A boy is hoisted on to the shoulders of the last one of the line, and he has to walk on the shoulders of the boys in front; he is supported by a boy who walks on each side of him. I believe there is a variant in which the boy walks on the other boys' heads.

At Veifaa we saw boys walking on their hands, head downwards. Standing on the head is called *Upu* at Hula.

Nama, or walking on the hands and feet, face upwards, was seen at Hula.

In a game called *Ulakai koriragi* (*kereragi* = "hanging") at Hula, the boy lies on the ground, full length on his back, and makes himself perfectly rigid. A number of other boys stand all round him facing outwards. They then whistle, turn round, and lift up the recumbent boy with their index fingers.

Somersault.—At Yule Island two boys took hold of each other's arms as in *Evanena* (the "King's Chair" of our children). A third boy poked his head through the central square from above and was turned in a somersault by a bystander.

The game called *Ala rari* is played as follows at Hula. Two boys face one another and securely grip each other's arms, thus forming a parallel bar. Another boy swarms over and under the arms without touching the ground.

Leap-frog, called *Keworina* at Hula, and *Kerepeduai,* "jumping up" or "shooting," at Saguane. A row of boys stand in a line, some distance apart, on their hands and feet, the last boy leaps over the others in succession, putting his hands on their backs in the usual way. He then takes his place in front of the others and the new "last man" follows. This appears to be a very widely-spread game. In Korea and Japan it is called "Jumping over," and the same attitude "on-all-fours" is there taken as in New Guinea.

Along with the foregoing Games of Agility may be placed the following:—

Pĕkĕkau, Pig-a-back; *Kaikai,* Hopping; *Puri,* Jumping; and Skipping; which were seen at Hula.

Wahoro is a game in which children jump about in a squatting position and flap their chests (Elevara).

Games of strength—*Mota ĕrĕmpto,* is thus played at Hula. A number of boys stand in a circle, each boy catching hold of his neighbours' wrists. One boy stands in the centre with arms folded over his chest.

The encircling boys sing:—

Mota ĕrĕmto ĕrĕmto
Bariva dĕrĕmto dĕrĕmto
Mota tim
Bariba tim
Pekuluoa waiau o!

This sounds like a challenge, and immediately the rhyme is finished, the central boy rushes at the joined hands of any two boys and tries to burst through. The game is finished when he succeeds. On p. 276 Captain Barton records this game which he found at Nara; we failed on enquiry to find it on Yule Island.

Mr. Ray noted a somewhat similar game at Saguane which is called by the expressive name of *Sioro boromoro*, "dog, pig." A number of boys stand in a ring holding each other by the hand. The boy inside, the "dog," has to catch a boy, the "pig," who is outside the ring, by breaking through it. Mr. Ray draws attention to the resemblance of this game to our "Cat and Mouse." It is similar to the game variously termed "Bull in the Park," "Bull in the Barn," "Pig in the Middle." (*Cf.* A. B. Gomme, *Traditional Games*, i, 1894, p. 50.)

We saw the following game played at Veifaa. Four boys clasped hands forming a circle round a number of other boys. These attempted to break through; when they escaped they were chased and, if possible, captured.

At Elevara boys play at Tug-of-War; they form a long line by clasping each other by the wrist or arm and then the ends pull in opposite directions.

Mr. Ray saw a novel variant at Saguane called *Otaroro wamuda durudo.* A long thick bamboo is placed on the ground, and pairs of boys sit on the ground facing each other; they place their feet and hands on the bamboo and then pull.

Games of endurance.—At Hula we saw boys sitting on the ground with flexed legs bending back their great toes with the index and middle fingers. This somewhat futile amusement is called *Lopia* at Saguane. Mr. Ray saw a boy lifted on a stick, clinging by his hands and feet, body downwards; this is called *Otaririro oriboa.*

We saw at Hula a game I find it difficult to class. Two boys clasp hands, a third boy puts his leg over the joined hands, and they all walk about.

A boy is swung lengthwise by two boys, each of whom holds an arm and a leg, and the following song is sung:—

Koroa auripuna, koroa auripuna
Ătatoina nunupe nanape daunaiio
Derewanaio aro deladelakau
Bue kemoka kemokemokau.

Guessing games.—Mr. Ray records a boys' game at Saguane called *Korosora.* A ring is formed, by holding hands, around a blindfolded boy, who has to catch one of the ring. The ring moves round and away from the player in the centre, who has to catch one of the ring and guess his name; if he fails in naming the boy the ring re-forms. The player whose name is correctly guessed is blindfolded in his turn.

Another guessing game seen by Mr. Ray, also at Saguane, is called *Sipi*. He thinks, from a remark made by the late Rev. James Chalmers and the similarity of the name and game, that this game is introduced, being a variation of "Hunt the Slipper."

A row of boys sit on the ground one behind the other with strongly flexed knees, the feet of each boy being by the loins of the boy in front, and his hands are placed between his legs. An outside player passes along the line apparently giving some small article to each of the sitters, but in reality only giving one object to a single boy. Another outsider has to find the object. After each guess the last boy goes in front. Perhaps this game would be better classed as a "Hide and find game."

Games of hide and find.—Mr. J. Bruce, of Murray Island, informed me of a game that is called *Nem deraimer*, or "Louse searching." It is played by men and women. Two sides are arranged, and they all kneel in a circle on the sand. One person, who is blindfolded, puts his head down and one of the other side picks from his head a louse, which is then hidden in the sand in the centre of the circle. All the players begin to sing and beat the ground with their hands, except the man from whose head the louse was taken, whose business it now is to search for it. If he succeeds in finding it one from the other side has to put his head down and do the searching. Should the man fail to find the louse one of the other side shows it to him and his side has to remain in until some one has been successful in the search. The one who finds the louse eats it.

A variant is called *Pone deraimer*, or "Eye searching," the crystalline lens of a fish is hidden in the sand instead of a louse.

A somewhat similar game is played in Korea, where a small object is hid in the ground; it is there called "Corpse searching." "Thing hiding" is a popular game in Japan.

Both sexes play a game by the light of the full moon in which food is hidden in the bush for others to find. I saw this game played in Murray Island in 1889.

Hunting games.—At Veifaa I saw boys playing games that mimicked the hunting expeditions of their fathers, a pig hunt and a kangaroo drive were very realistically acted.

The "kangaroos" jumped about on the grass and some hid under bushes, they were stalked and surrounded by "men," a rush was made and the flying kangaroos were chased all over the ground, man and kangaroo would tumble about in close embrace, the latter giving characteristic vigorous backward kicks with his legs.

The "pigs" walked about on all fours—hands and feet, and were chased by "men" with sticks to represent spears. When the men came close to the pigs, the latter jerked their heads sideways with an upward movement, as if trying to rip up the men with their tusks. The pig was eventually captured, and two men brought a pole, and the pig clasped it with his hands and hooked his knees over it, his body hanging down, and so, like a tied-up pig, he was carried to a place where some boys had laid sticks across one another to represent a fire. The pig was placed on this amid much laughter.

Games mimicking ceremonies.—At Veifaa a number of children played their games for us to witness, and towards the end of the afternoon several boys absented themselves for some time, and when they returned they presented a remarkable appearance. They had bound round their bodies and limbs strips of green or sere banana leaves, and looked for all the world like miniature knights of old in leafy armour; the head was entirely covered, the leaves in some cases being prolonged above into a long spike, flaps hung down from all the head-pieces like frilled capes. One or two boys had a fringe round the waist, and all had leaves radiating from their ankles which gave them a very curious appearance. Usually the hands were swathed in green bands, and in some the bandaging of the right arm was continued on to a stick held in the hand, so that the whole was continuously swathed.

The boys thus grotesquely accoutred chased the girls about and made them scream. The naughty little fellows were, as a matter of fact, mimicking the *fulaari*.

We were informed that in this district of British New Guinea the villages are divided into two main communities, each with its own chief, one is the usual head man, the other is the *afu* (or tabu) chief. It is his business to put *afu* on coconuts, areca-nuts, etc., if he sees signs of failing crops. Members of the other community than that to which the *afu* chief belongs, have the responsibility of seeing that the *afu* is observed, and some fourteen or fifteen men called *fulaari* constitute a sort of constabulary, and every evening they go round the village armed with clubs and disguised with masks, or covered up with leaves so as to be unrecognisable. At Waima all the enforcers of a tabu wear masks attached to enormous cloaks of leaves; at Inawi and Veifaa they paint the face and cover up part of the body, but they sometimes wear masks; at Aipiana they cover over the whole body with leaves, as the boys did at Veifaa.

Very important and sacred ceremonies, mainly connected with the initiation of lads into manhood, and other functions relating to the social and religious life of the men are conducted in secluded areas in Torres Straits. Among the Western Tribes these sacred spots are called *kwod*, and they are tabued to women, children and all non-initiates. There is a peculiarly interesting *kwod* in Yam Island, in which were the only totem-shrines I have come across; in the same island I was shown a spot in the scrub where the small boys used to play at *kwod*, and they had collected little heaps of clam and other shells, some of which they had also painted red, in imitation of the plain and ruddled shells that form so conspicuous a feature in the *kwod* of the men.

Game of divination. *Koko.*—This is a game that is played by girls only. They plait coconut leaves into a basket-like head-dress, which they further decorate with gaily coloured leaves and flowers, or they may simply twine leaves or vines round their heads like a garland. They rush into shallow water, and as they form into line, each one places her hand on the shoulder of the girl in front of her, and they repeatedly sing *Koko koko kaip wageb*, keeping time to the music by bobbing their heads up and down. *Koko* literally means "to carry on the back," like the way a mother

carries her child. *Kaip* is a small bivalve mollusc used for scraping food, etc., *wageb* is a larger shell that comes from New Guinea, and is used for similar purposes.

After the girls have finished promenading and splashing in the water, they return to the sand-beach and sit down in a ring; each takes a small piece of charcoal in each hand, and then pushes her hands backwards and forwards in the sand, singing all the while *Kegu bamu gared gep. Keg* is charcoal; I could not discover any meaning for the other words. The girls then withdrew their hands from the sand, and holding them up examine the palms, which are likely to be streaked by the charcoal and by chalky particles in the coral strand. If the charcoal leaves two marks on the palm of the hand, they say, "Ah! *Keg* has killed a man." They then begin again.

Round singing games.—The following is the version I recorded of the game described by Captain Barton on pp. 273, 274.

Korikini.—A number of children sit in a circle very close together; each holds the index finger of his hands upwards closing the thumb and other fingers, with one hand he clasps the index finger of his other hand or that of another child's; by this means a column of hands is made, the uppermost having its index finger pointing upwards. One child who has his right hand disengaged taps the uppermost index finger transversely—all singing:—

Korikini	*korikini*	*kapa*	*raurirauri*	*mariri*	*ariana*
Stick up finger	(ditto)		crossing	look at	look

Korikoana	*karigamu*	*ai*
Take away finger	your armpit	in

The uppermost hand is then removed and placed under the armpit of the same side, when all have their hands under their armpits, the same child gently scratches each hand in rotation while singing:—

Pika pika kiaka pa
Gaule aule kaika pa

Kinimale.—The players sit very close together and pinch up the skin of the back of each other's hands—the slightly flexed hands being placed one on the top of the other—the whole column is swayed up and down to the following song:—

Kinimale kinimale
Pinch flesh (ditto)
Lekwalekwa malawa
Loose it (name of a yam)
Ketaketa ana olio
(name of a yam) run
Malauli malauli polaia polai
Baby baby yellow

Another version given to Mr. Ray by Kima was: *Kinimale kinimale lekwalekwa malawa kaita* (yam) *keipakeipa* (one only) *ana olio melauli melauli poloia.*

Toitoi.—When this is finished the top hand is placed palm uppermost with extended fingers at the bottom of the column. The song is repeated until all the hands are placed one on the top of the other. Sometimes the two hands of a player are placed side by side, the others being placed on the top of these, all the hands are then raised up and down. One child with a disengaged hand gently taps the uppermost hand three times with the index finger holding it vertically downwards and sings:—

Toitoi o tutum
Three times tap
Keanai nunapakau
Ear his in hold him

At the end of the refrain the tapped hand is removed, and the nearest ear of the next player is held by it. When all the hands are released, and all the ears are held, the players swing forwards and backwards, pull the ears hard and sing:—

Mekeri aria
Pull one another
Kiko aria

This continues until one of the players gives in. (Plate XXIX, Figs. 3 and 4.)

The words for the ear-pulling may apparently be varied, as some children once sang:—

Wapuri poto
Kaia poto i i i

In one form of the game the hand that is tapped, and thereby released, clutches hold of the hair of the neighbouring child; finally both the hands of each child grasp the hair of the child on each side, and the bodies sway forwards and backwards. The words sung are:—

Vegoli kini ketoketo
Hold pluck

Mr. Ray saw the *Korikini* game played at Saguane, where it is called *Kuke.* We could not discover this series of games on Yule Island.

Dr. Walter Roth in *Bulletin,* No. 4, of his very valuable monograph on *North Queensland Ethnography* (Brisbane, 1902), describes analogous games from Cooktown, Cape Bedford, and the McIvor River. One is an imitative search for honey, in one phase of which all the cupped hands rest on one another. Another, which represents "catching cockatoos," begins with the first phase of *Korikini.* The indices in this game "represent cockatoos sitting one above the other on a branch of a tree," but the subsequent phases are different. A somewhat similar game from the lower Tully River represents a bean tree, and each hand a bean; the latter are gathered in rotation by the girl or boy who directs the game, "pinching up the skin on its dorsum."

A rather strange fanning game, *Totuam,* is played in Murray Island by men and women during the north-west monsoon. One party visits another, and the



FIG. 1.—MAKE GEGELAKI.



FIG. 2.—EVANENA.



FIG. 3.—TOITOI.



FIG. 4.—TOITOI.



FIG. 5.—POSI-PATA.



FIG. 6.—POSI-PATA.

NOTES ON CHILDREN'S GAMES IN BRITISH NEW GUINEA.

visitors fan the residents, who loll luxuriously on mats, food being given by the latter to the former. A return fanning visit is paid.

The Murray Islanders also form themselves into serenading parties, *Rob*, at the beginning of the south-east monsoon, visiting various villages in succession.

These, and other games and amusements of the Torres Straits Islanders will be described at length in vol. iv of the *Reports of the Cambridge Anthropological Expedition to Torres Straits.*

ON TEN'A FOLK-LORE.

By the Rev. J. Jetté, S.J.

Story-telling, among the Ten'a, is considered quite an accomplishment. With what success they cultivate the art—if art it may be termed—I shall leave the reader to judge for himself after he has perused these pages. I shall endeavour to present a selection of Ten'a tales, sufficient to give a fair idea of their folk-lore.

Story-telling is commonly resorted to as an entertainment to pass away the long winter evenings. The formula, which almost invariably concludes these narratives, evidences this purpose; the narrator winds up his tale by stating that he has "shortened the winter." The entertainment is highly relished. These overgrown children enjoy the stories as much as our little ones their nursery tales, and pretty much after the same fashion they half-believe in the reality of the facts related. They may have heard the legend scores of times, they may be able to tell it themselves; their interest is not the less for their knowledge of it. The stories are never stale to them, never old or tiresome. The season during which the story-telling is at its height is the first part of winter, until the celebrations of the mid-winter festivals are passed, *i.e.*, for about six weeks, from the beginning of December to the middle of January. The entertainment is always an improvised one; no previous arrangement is made. It takes place in the dark. At the usual hour, viz., about nine o'clock, the inmates of the cabin go to bed, that is, stretch their blankets on the floor and roll themselves in them, all around the house, their heads to the wall; generally ten, fifteen or more, sleep thus in one house. The last one to go to bed puts out the light, and darkness instantly takes possession of the place. Every chink is, at this season, well caulked, for the cold is intense; heavy curtains, made in our civilized days of old gunny-sacks, hang on the outside of the windows, to prevent the formation during night of a heavy frost on the inside of the panes, and exclude the very faintest glimmer. It is then that someone suggests, "Let us have a story!" And after some hesitations and entreaties, anyone that "has a story" begins. Politeness requires that after the first sentence, generally very short, the listeners encourage him with the special interjection *anni!* which is used only for this special purpose. The following sentences are also usually followed by an encouraging *anni!* from some of the listeners, and usually the whole narrative is thus punctuated, every now and then, by the *anni* of approbation.

The story-teller speaks slowly, in a sort of mysterious undertone, which contributes, together with the darkness and the wonderful character of the facts

presented, to cast a sort of awe on the audience. As the story develops, the interest increases; peals of laughter, exclamations of commiseration or disgust, reflections on the characters and actions described, conjectures as to what is going to follow, soon cross each other from all quarters. The intense interest and excitement then displayed I cannot better compare than to the impressions manifested by the audience in our theatres. It is the same display, although on a reduced scale.

It happens, of course, that the story is long at times, and the narrator uninteresting; in consequence he puts his audience to sleep, and may stay for a while talking in the dark to no ears but his own. But, as far as my experience goes, this very seldom happens, and, as a rule, the most lively interest is displayed by the whole audience until the very end.

The darkness, required as a condition *sine quâ non* of the story-telling, has considerably hampered my efforts to obtain specimens of the folk-lore. A few times, indeed, finding myself unable to scribble in the dark, I made an attempt at striking a match and lighting a candle, but Medusa's head could not have produced a worse effect. Both narrator and audience were petrified into a desperately silent mood, and not a word was obtainable after that. I had, therefore, to trust to my memory for the main facts of the tale, and by dint of persuasion induce the story-teller to repeat them piecemeal during the following days. The texts I have thus obtained are not quite as rich in detail as the original story. I am confident, however, that they faithfully present the genuine story couched in genuine Ten'a, having put them to the test by reading them aloud to groups of natives, who declared that they understood them perfectly.

The stories are designated in the Upper dialect by the term, *kādōn-tsĕdĕni*, which is an incomplete phrase, meaning, "In old times, it is said," and form a fit formula of introduction, somewhat as in English, "Once upon a time." The Lower dialect call them *roloih*, which seems to be a proper word meaning "story," and it has the connected verb, *rotlloih*, I tell a story.

They may be divided into three classes. First, the inane stories, that are perfectly insignificant and meaningless. The first of those quoted hereafter belongs to this class. They are used by story-tellers who wish to shirk the task and dare not openly refuse when requested, especially when insistently encored after an interesting relation. Also, when a story-teller at the beginning of his narrative finds the audience irresponsive, and does not receive the customary *anni*, instead of stopping short and dropping abruptly, he winds up after a few sentences, and concludes his story in this peculiarly insignificant form.

Second, the myths, or stories connected with facts acknowledged as having really happened; the second, third and fourth of the following stories are of this class. They present the mythology of the Ten'a, intimately connected with what may be considered as their historical records. They are especially difficult to obtain, and the natives are very reluctant to let them be taken in writing.

Third, stories analogous to our works of fiction, having no relation to historical

events or personages, and often modified by the narrator. They may serve to illustrate native customs and to give an insight in the Ten'a thought, but make no pretence to historical exactness. The fifth story, in the following series, is a sort of transition between the myths and the tales of this last group, and partakes of both. The subsequent tales are decidedly fiction. Stories of this description are more easily obtained than the myths, but the inane stories can be had for the asking.

The titles which I have given to them are generally obtained from the natives themselves. It will be remarked that many words, such as "rătlĕ," "rél'é," "rŏntĕn," "ărŭrŭyĕł" (pronounced in the Lower dialect, "ărŭrŭyĕł"), etc., are capable of various renderings. Their meaning is greatly influenced by the context. Often they are mere expletives, comparable to the particles δε, γαρ, γε, etc., of the Greek.

Nĭl-tsūkălăyū.

The grandmother and her grandson.

Nĭł-tsūkălăyū lĕdŏ. Mĕ kŏya kŭn te-l'ăn. Tsōnkŭda
A-grandmother-and-her-grandson stay. Her grandson firewood gets. A-prairie-chicken (or willow-grouse)

ătłtłĕł. Tsĕyĕrŏtsĕ kŭn no-dălerŏr. Tsĕyerotse te
he-shot (with an arrow). And-thus the-fire-wood he-sleds (home). And-thus his

tsukăla tse rŏyĭ rŏdĕrĕlō, tse nō-rŏdĭłkōn.
grandmother to in-the-underground-house he-brought-the-wood, and he-lit-the-fire.

Tsonkŭda ă-rŏnĭ-kerĕłtlĭh. "Lĕyăn, kăntă," te tsukal
The-prairie-chicken he-put-to-roast-on-a-stick. "It-is-fat, it seems," his grandmother (willow-grouse)

ăłnĭ. Tse ye yăr ni-kĕnĭtōn. Tsĕyero ko tsukal
he-says-to. And her down-in-front-of he-put-some-in-a-dish. And-thus this grandmother

mĕdĭkŭda ără te kŏya ītĕnătłkŏih. Tsĕyerotse me kŏya tăkă
a-spear with her grandson made-a-thrust-at. And-thus her grandson up

tŏ-dlĕrăł, tsĕyerotse tsĕbă kătse tŏ-dlerăł. Tsĕyerotse me tsukal ye
fled-up, and-thus a-spruce-tree on up-he-fled. And-thus his grandmother it

yar ni-nĭyō, tse yĕdītĕnăltłĕł. Tsĕyerotse: "Tsukăla, yūyărtsĕn
beneath came, and began-to-fell-it. And-thus: "Grandmother, from-below

sĕnĭnłan," yĕłnī. Tsĕyerotse te tsukal nŏkŏt kĕrĕłtłĕł,
look-at-me," he-says-to-her. And-thus his grandmother's eye he-shot-an-arrow (in),

tsĕyerotse no-no-răllĕrăł, tseyerotse răllĕrăłtł. ărŭrŭyĕł kăyăr
and-thus down-again-he-fled, and-thus he-was-fleeing. Then a-village

nĭyō, tsĕyerotse me tsukal ma ka nĭyo. Tsĕyerotse me kŏya
he-came-to, and-thus his grandmother him after came. And-thus her grandson

yar ledŏ. "Kŭn sor tłi dānĭłtŏih," te koy ăłni. Tsĕyerotse
in-a-house is. "Fire me-to out bring," her grandson she-says-to. And-thus

kŭn-dălĕkŏnĕ yor tłi dānĭłtŏn, tse te koy lătłrăn, tĕkĕn ără,
a-burning-ember her-to out he-brought, and her grandson she-killed, a-stick with,

tse yĕdĭłkon.
and she-burnt-him.

Free Translation.

A grandmother and her grandson were living together. One day, as the young man was getting some firewood he shot a prairie-chicken (willow-grouse). When he had brought his wood home and lighted the fire, he put the chicken (grouse) on a stick to roast. When it was cooked he put a piece of it in a dish, and placed it before his grandmother, saying, "It looks good and fat." But the old woman, seizing a spear, made a thrust at her grandson. Whereupon he took to flight, and climbed on a spruce tree. The old woman came to the foot of it and began to chop it down. "Granny!" he cried to her, "look at me from down there"; and, as she did so, he shot an arrow in her eye. Then he speedily let himself down and ran away to a neighbouring village, the old woman pursuing after him. When she came, he was already in a house, so she shouted to him from the outside, "Bring me some fire." And he brought her a burning stick, but she killed him with a club and burnt up his body.

Notes.

"Nił-tsukālayu." The reciprocal pronoun, "nił," prefixed to the plural of a word expressing a relation of some kind, denotes both terms of the relation. Thus, "tsukāla" meaning grandmother, the other term of the relation is the grandchild, "kōya," and the plurals, "tsukālayu, kōyaka," preceded by "nił," denote the grandmother and the grandchild, "nił-tsukālayu or nił-kōyaka. In like manner, the plural of "kŭn," husband, is "kŭnka"; and that of "'ot," wife, is "'oka"; hence a married couple is designated either by, "nił-kŭnka," or by "nił-oka." Here the other person is known to be a grandson, not a granddaughter, from the following of the story, but also from the Ten'a custom. A grandmother will adopt her grandson, not her granddaughter, because she takes the child as a help for the work, and there is nothing that the girl could do which the old woman could not do herself. But the boy can perform all the tasks which, by custom, are reserved to men, and are not therefore within the pale of the old woman's attributions. Similarly, a grandfather will adopt a granddaughter, not a grandson, for the same reason.

"tsonkŭda," a prairie-chicken (willow-grouse), a bird of the pheasant family, smaller than either the grouse or the ptarmigan. Its flesh is entirely white when cooked.

"a-roni-kerélthlih," literally, something was planted in the ground to (the fowl); the word is used only to express this mode of cooking, which is common among the Ten'a, where a camp-fire is available. Fish, fowl, ducks, musk-rats and occasionally slices of deer and bear meat are thus roasted by the fire. The birds and musk-rats are previously cleaned and spread open, the stick being driven through so as to keep them in position. The fish are not emptied, but the stick is passed through the flesh and backbone, and must not

penetrate the entrails; the mouth of the fish is tied with a strip of willow bark.

"medīkŭda," a spear. The Ten'a use three kinds of spear, one to kill bears, another to spear fish, and the third to open the water-hole in winter. This one is here meant, and the word used, though applicable to the others, is proper only for it. It is a pole, at least 6 feet long, at the end of which is fastened, in our days, a piece of iron or steel from 12 to 20 inches in length. This was formerly a piece of bone or of stone.

"kŭn sor tłi daniłtoih." The ending *toih* marks a singular, as if she said, *a* fire, or a burning stick; it also implies that the thing spoken of is actually burning. The young man's readiness to comply with the grandmother's injunction well illustrates the passive obedience of the young Ten'a to any one older than himself. No one but a Ten'a boy would have obeyed the summons under the circumstances; but, in a Ten'a, this obedience is the only course that could be expected.

Tōtsŏn.

The Raven.

Kăyăr rūkŏrtĕn rūlān, tsĕdĕnī. Tĕn'ă lōn. Kōskŏnōn rŏgĕtă kūn
A-village large there-is, we say. People are-many. A-house large also

rūlān. Ēit răłtĕ, yūtłīt, tsŏrŏtĭyă yătsĕnă, kĕtłkŭł.
there-is. There and, riverwards, the door on-that-side-of, a-blanket-is-spread.

Kĕn sŭŭ mĕ tōr rūlān? Tsărăłtĕ rădădlĕtłé yūrrū. Rŏntĕn
What perhaps it under there is? And they-stay thereabout. Strange

sō sīłtŏ-dălĕnĕn: tsărŏł-kĕdĕnăłlĕtłĕtstsĕ tŏ-rŭdĕyŏr, tsĕ yūur răłtĕ,
the-sun has-been-lost: being-darkness-dark it-has-become, and there

kŭn yĕł rā-kĕreĭłdzăih tsĕ kŏ-reĭdĕdāł. Kŏ nĕdătsĕ tŏ-rŭnăr?
fire with they-make-light and they-go-about. Here how shall-we-do?

Tsărăl-kĕdĕnăłlĕtłĕts-tsŏ-rŏyăn tŏ-rūtăltă. Rŏntĕn, tsūkălă
Being-only-darkness-dark it-has-begun-to-be. Suddenly, the-old-women

tă-rădĕnī: "Kŏ-tĕmă tĕnă ŏrō sō nŏ-ĭrŭłkūt?" Intĕn tĕmă?
say: "Who us for the-sun shall-take-back?" But who?

tŭ-rŭnărĕn ădĕn. Rŏntĕn nĕñkŏrŏtĕn'ă dīlŏyă lŏnĕ kōskŏnōn
the-one-to-do-it (there-is) not. Suddenly the people chattels many the-house

ro rărĕlŏ, yūtłĭt ătłkŭlĕ rŏn. "Tŭrŭyĕ tĭłrō
in they-brought, riverwards the-spread-blanket to. "These-things in-exchange-for

tĕnă ŏrō sō ŏkŏ ko-nānĭtŏr," răyĕłnī. ĭntĕ nĕdăn:
us for the-sun in-search-of fly-about," they-say-to-him. But no:

rătĕłnŏihă tsŏ-rŏzŏkŏł. Tă-răr'ănă tłī nŏ-răyĕnĭlŏ tĕtłĕktsĕn.
he-does-not-stir not-even. Wherefore out they-brought-them-back entirely.

Kŏ kēn ră yŏ rŏtsĕ rĕĭrŭłnĭh, īrŭ? Răyĕłnĭ kūn:
Here what they him to must-give, perhaps? They-say-to-him also:

"Łĕkă nŏtĕrkĕ tsĕītĕlōłrāł, nŏrō," rāyĕłnī. ărŭrŭyĕł rătālnōn: "Ă'ă,"
"Dogs two we-shall-kill, you-for," they-say-to-him. Then he-moved: "Yes,"

nī. Tsĕ kĕkŏr yān rŏrŏtăt'ŏn, yĕn-īlĕyăntsĕ tĕ-nŏ-rŭrŭlŏr,
he-said. And fat only they-began-to-feed them, being fat they-made-them,

tsĕ rŏrŏrĕrōn, tsĕ nī-rŭrūnĭtōtł, tsĕ rŭrŭtłbāts, tsĕ
and they-killed-them, and they-cut-them-in-pieces, and they-boiled-them, and

răyĕ-yĕrĕł'ōn. Tsărăł-kĕdĕnăłlĕtłĕts-tĕn tłĭ nĭyŏ tsĕ yūr-nĕdără
they-fed-them-to-him. The-darkness-dark-place out (of) he-went and somewhere

ītĕnăltōk, tsĕ nŏtŏrtł. Nĕdăr sŭŭ? Rŏntĕn yĕkŏih īłtłŏn,
he-began-to-fly, and he-was-flying. Whither perhaps? Suddenly a-light he-perceived,

tsărăłtĕ tsărāł-kĕdĕnăłlĕtłĕts-tĕn rŏyī-dzā nătōk, yŭrrŭ kūn ĭnaltōk.
and the-darkness-dark-place out-from he-flew, thither too he-flew.

Rŏntĕn kăyār nătōk; yĕt rŏtŏkŏ īnăltōk. Rŏntĕn sōltăn
Unexpectedly (to) a-village he-flew; there over he-was-flying. And-then a-woman

zŭŭ tū ŏkō nŏkŏ dĭră'ŏł; yūtłĭt tŭkĕnkăt
beautiful water in-search-of down-the-bank was-going; riverwards (at) the-water-hole

tū tăłlĕnūn. Ronten āł yŏză ă-ltlăt tsĕ yĕ
water she-began-to-drink. Suddenly a-spruce-bough small he-became and it (the water)

yī kărădĕrĕrăł. Kăł nŏ-yĕdĕtĕłrŏihtł, īrŭ, ĭntĕn yĕ yī nŏ-īdĕdŏrŏihtł,
in he-fell-down. Away she-pushes-it-often, in-vain, but it in again-it-comes-back,

tsĕ rŏtĕkāł yĕ yĕł tū răděnŭn. Tō-nŏ-tăłlĕyŏ, tsĕ rādō
and at-last it with water she-drank. Up-she-went-back, and in (the house)

nŏ-ĭdĕyo, tsĕ yūr tŏ-rŭtā, ărŭrŭyĕł mĕ yī tĕn'ă rūtăltlāt.
she-went-back, and anything goes-on, then her in a-child there-began-to-be.
(= nothing happens)

Tsĕyĕrŏtsĕ nŏ-rŏrĕłtān. Tsĕyĕrŏtsĕ kŏ yăkănyŏză ko-tăłlĕyŏ; yūr
And-thus she-brought-forth. And-thus this baby began-to-walk; some (things)

ko-rūtăltlŏ, bān tłŭră lĕtlŏyĕ, ĕitĕ kŏ-ĭlā.
he-began-to-carry-about, (at) his-mother's pillow the-things-that-are, these he-carries-around.

Arŭrŭyĕł yūnĭ-yūtłĭt rŏnĭł'ān, aruruyeł sō iłtłŏn, tse
Then up-river-riverwards he-looks, then the-sun he-perceived, and

yŭlnĭk, yūnłĕt ni-yĕnĭ'ōn, kŏ-yĕtăl'ōn. Yū'ănă
he-took-it, off (from the wall) he-put-it, he-began-to-move-it-around. Away

łăł tŏyĕkă, rŏyī yĕrĕłbātł. Bān yū'ănă yŏkŏ
the-underground-entrance under, in-the-hole he-rolled-it. His-mother away it-in-search-of

rŏyĭ rĕyŏ, tsĕ nŏ-yŭlnīk. Yūnī-yūtłĭt nī-nŏ-yĭnĭ'ōn. Aruruyeł
in-the-hole went, and took-it-back. Up-river-riverwards she-placed-it-back. Then

ko yakanyoza tăltsăr. Bān: "tălēk," yĕłnī; ĭntĕ ătsăr.
that little-one began-to-cry. His-mother: "hush," she-says-to-him; but he-cries.

Aruruyeł mĕ-l'ā kĕ'łŏkĕn tĕ-yĕłnī: "Nōnĭ-nŏtłĭt sō lŏ'ŏnĕ
Then his-uncle one says-of-him: "Up-river-riverwards the-sun that-is
(= mother's brother)

kāt, rŏtăn"; tĕ-dĕnī. Aruruyeł ko yakanyoza tădlĕ'īh. Ban
(he) wants, perhaps"; he-says. Then that little-one said-"He!" His-mother

so ulnik tse tĕ-tĕn'ă tlo-no-yĕrĕ'ōn. Ko yakanyoza
the-sun took and her-child she-gave-it-back-to. That little-one

ko-no-yetal'on : yu'ana łāt tŏyĕkă royi no-yerétbatł.
began-to-carry-it-around-again : away the-entrance under in-the-hole he-rolled-it-again.

Ya ka royi réyo : yū'ŭt rŏtłĭ-rĕtŏntĕn ro yĕrĕ'ōn, tse
It after in-the-hole he-went : there where-there-is-a-passage out he-brought-it, and

łāłyī tă'ănă tłi yĕnĭ'on. Ko yakanyoza tōtsōn ā-nŏ-łlĕlāt ;
the-entrance away-from out he-put-it. That little-one a-raven he-became-again ;

ye yeł no-ĭtōk, tse nŏ-nŏtŏrtł. Tă kăyār ye yeł nŏ-nătōk :
it with he-flew-back, and he-was-flying-back. His village (to) it with he-flew-back :

nĕñkŏrŏtĕn'ă tlo-no-yeré'on. Arurúyeł rā-nŏ-rūdālt'īt, tse "nĕtŭră,"
the-people he-gave-it-back-to. Then it-was-light-again, and "thanks,"

răyĕłnī. Yĕt-rŏtłŏrŏn ko tōtsōn yutłit tsŏrŏtĭyă rŏkălă, yet
they-say-to-him. Thereafter this raven riverwards the-door aside-of, there

ni-no-ideyo. Yet ra ye tŏr nŏ-kĕdĕrĕłkūł. Kŏtă, rŏih
he-returned. There they him upon spread-again-a-blanket. That-is-all, the-winter

rōn năłĕtłkŭs.
a-part-of I-have-chewed.

THE RAVEN.

There was a large and populous village, says the old tradition. A big house, stood in the place, and near the door, between this and the river, a blanket was spread on the ground. What could there be under it? People were gathered around it. A strange thing had occurred: the sun had disappeared, and all was in the dark; they had to light their way with torches. What was to be done? it was dark all the time. Then the old women began to say: "Who will get back the sun for us?" But who indeed? There was nobody to do it.

Well, the people began to carry things into the house, quite a pile of things, as a gift to the one under the blanket. Then they said to him, "You go and fly about to get back the sun, and we will give you all these." But it was of no avail: he did not budge. So they took all the things back. Then they said to him: "What if we kill two dogs for you?" This time he stirred: "Yes," said he, and so they began to feed the dogs on fat only, and made them very fat. Then they killed them, and cut them in pieces, and boiled them, and fed him with them.

Immediately he started to fly out of the darkness, flying along. Where was he going to? Suddenly he saw a light, and flying towards it he emerged out of the dark. He had come to a village, and over it he hovered. There came a beautiful woman, going down the bank to get some water. At the water-hole she began to drink.

All of a sudden the raven was transformed into a tiny spruce-leaf, which fell down in the water the woman was drinking. She pushed it off, again and again, but

every time it came back, and at last she swallowed it with the water. She went back to the house, and, not having had any intercourse with any man, she became pregnant, and, in course of time, gave birth to a child. When this child was old enough to begin to walk, he would play with the things that were in the house, dragging them around. He used to take things from under his mother's pillow, and carry them here and there.

Once, looking in the south-east corner of the house, he saw the sun there in the corner. He took it, brought it into the middle of the house, and began to move it about the place. Then he rolled it into the underground tunnel, toward the entrance. Seeing this, his mother went into the tunnel after it; she brought it back and replaced it in the south-east corner.

Then the child began to cry. "Hush!" said his mother to him; but he cried none the less. One of his uncles said: "I think he is crying for the sun, there in the south-east corner." And the child said: "Hé!" (=Yes). So the mother took the sun and gave it back to her child, and again he began to move it about; again, he rolled it into the entrance tunnel, following after it, and soon enough he had lifted it up through the entrance-hole, and placed it on the outside of it.

The child then resumed the raven form, and took its flight, carrying the sun. He went on, flying, until he reached his village. There he gave back the sun to his people, and they thanked him: it was daylight again.

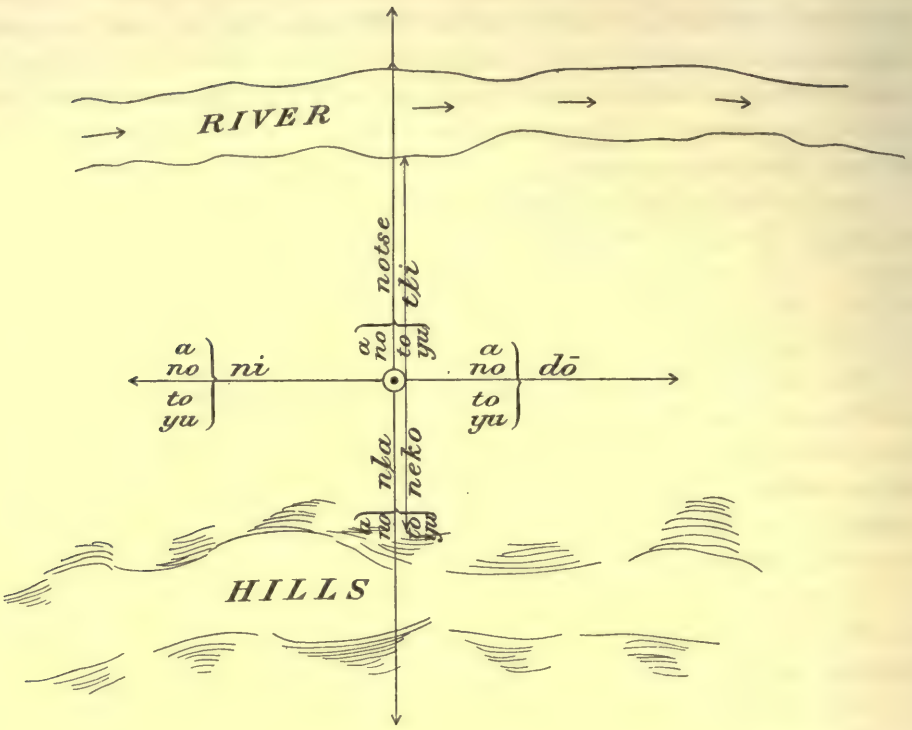
After that he returned to his place, by the side of the door, towards the river, and they covered him again with the blanket.

That is all. I have chewed off a good bit of the winter.

Notes.

"Kōskǭnōn," a big house, properly the meeting-house, where dances and celebrations of all kinds took place. There was one in each village, and it was large enough to hold the entire population, and at least as many more guests. In old times all the winter dwellings were underground, and consequently, also the "koskonon," for the celebrations are mostly held during winter.

yūtłīt, riverwards. To understand this and the following narrative, it should should be remarked that the Ten'a, as well as many other tribes, make constant use of four designations of direction, which practically answer to our cardinal points. They are designated by the adverbs: "nī, nīt," upstream; "dō, dōt," downstream; "tłī, tłīt," riverwards; "nĕkŏ, nĕkŏt," landwards. For long-distance points "tłi, tłit," are replaced by "nōtsĕ, nōtsĕt," across the river, or "nān, nānă" across the sea; and "nĕkŏ, nĕkŏt," are replaced by "nłă nłĕt," beyond the hills, there being generally a range of hills running parallel to the river. The following diagram illustrates these directions:—



Adverbs of direction are always preceded by one of the prefixes: "a, no, to, yu"; "a" and "no" denoting the nearest point in the given direction, "yu" denoting the furthest, and "to" any intermediate. Consequently, "a" and "no" are also used to point to any short distance, "yu," to any long one, and "to" to any that is neither remarkably long nor short. Intermediate directions are formed by combinations, exactly as we say north-east, for a direction between north and east; they are (using the prefix "yu"): "yutłi-yunit," riverwards-upstream; "yuneko-yunit," landwards-upstream; "yuneko-yudot," landwards-downstream; "yutłi-yudot," riverwards-downstream; "yunotse-yunit," across-upstream; "yunła-yunit," overhill-upstream, etc. These narratives being collected from people living on the Yukon, where all the settlements are, practically, on the north bank, the general course of the river being to the west, I shall consider, unless the context should stand against it, that "yunit, tonit, nonit, anit," are practically equivalent to east; "yudot," etc., to west; "yutlit, yunotset, yunana," to south; and "yunekot, yunlet" to north. But these renderings are not to be considered as expressing the meaning of the words "yutlit," etc.

"tsŏrŏtīyă," the door, viz., the opening or vacant space. In the underground house this is a hole in the ground, by which one goes down to the entrance tunnel.

"ketłkūł," a blanket is spread. The Ten'a word does not imply a definite object. The ending kūł denotes anything that can be folded in all directions, as blankets, clothes, tents, sails, etc. The indefinite pronoun ke, which begins the verb, means something undetermined; the whole verb literally means: something, of that kind of things which can be folded in all directions, lies.

"kĕn sŭū mĕ tŏr rūlān?" this question invites the hearers to guess that the Raven is meant, because he usually figures in the stories as an individual careful to wrap himself in blankets. His identity will be made quite plain by his eating dog-flesh, and the narrator will not need to name him. In fact he is mentioned under his real name, "tōtsōn," only towards the close of the story.

"tsūkālă tā-rădĕnī." The phrase may be understood as a singular: an old woman says about the circumstances—then "ra" is the qualifier, and the verb is "radesni";—or as a plural: the old women say—then "ra" is the pronoun of the 3rd person plural, and the verb is "desni." The old women are the sages of the Ten'a tribes.

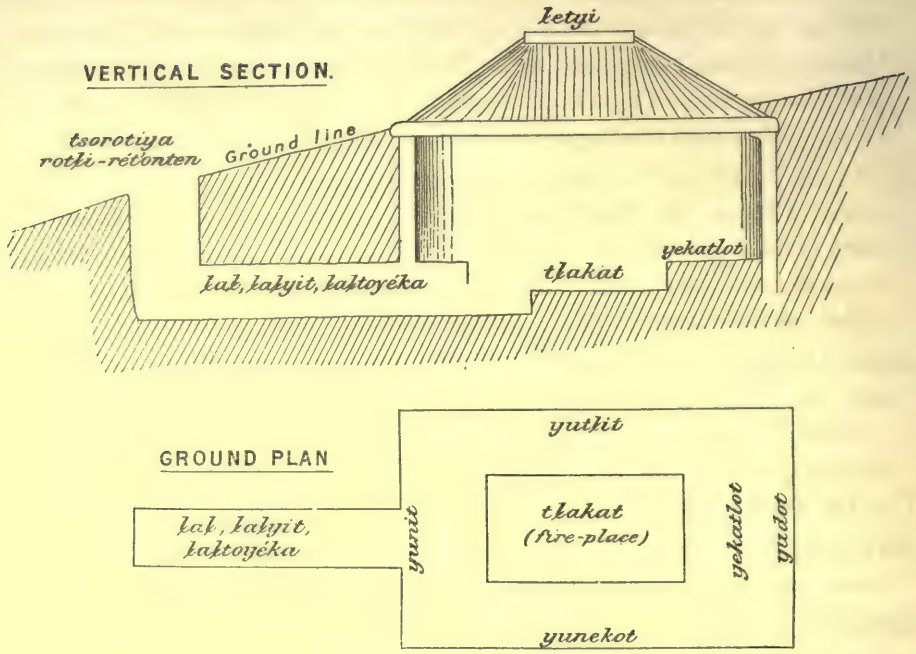
"łĕkă nŏtĕrkĕ," two dogs. Here the personality of Raven becomes manifest; only he has such a voracious appetite, and would eat dog-flesh.

"tūkĕnkăt," the water-hole. It is well-known that in winter every Ten'a settlement keeps a hole open in the river-ice, where the daily supply of water is obtained. Hence it is evident that the story relates a winter happening.

"yūr tŏ-rŭtā," literally: things are in some way; it simply expresses that nothing worthy of mention happens; but all the narrators took great pains to explain to me that it implies that the woman did not have intercourse with a man. She conceived from the spruce-leaf which she had swallowed.

"yūnī-yūtlīt," see, above, the note on "yūtlīt." (p. 305.)

"łāł tōyĕkă," literally: under the entrance, *i.e.*, in the entrance-tunnel. The winter dwellings of the Ten'a were formerly half underground, the roofs only projecting above the ground. They have two entrances, one through the chimney, "łetyi," or aperture at the culminating point of the roof; it is often used in the stories; the other through an underground tunnel some 10 to 20 feet long, in which one had to crawl on all fours: a hole in the ground gave access to it at the other end. They were invariably oriented parallel to the river, the entrance being in the upstream direction. Among the upper tribes, however, the entrance seems to have been facing the stream. The following rough diagram gives an idea of its shape and arrangement:—



In our days the Ten'a have universally adopted the white man's log-cabin, but they still retain the orientation of the old times, and consequently have the door on the east side. Even this remnant of their former customs is, however, rapidly disappearing.

"rŏih rōn nālĕtłkŭs." I have bitten off, or chewed off, a part of the winter, *i.e.*, my story has made a part of the winter pass unnoticed. "Naletłkŭs," I have bitten or chewed, is the word used by the people of the upper tribe, and they invariably explain it as above rendered. Those of the lower tribe, however, use "nekŭts," and explain it as meaning: is short; so that their phrase: "rŏih rōn nĕkŭts" means: a part of the winter is short, or shortened, viz., by my narrative. I believe this to have been the primitive meaning, even in the upper dialect form. Both phrases allude to one of the main purposes of the story-telling practice, which is to pass away the long winter evenings.

The myth of the Raven is one of the most universally rehearsed among the Ten'a tribes. The above text was given to me by Andrew Keniyo, a native of the Koyukuk River, but I heard it, in almost identical terms, from Alexander Rakayidelaih, of Nuloyit, from Nicholas Surarloł, of Kaltag, and from Andrew Rŭts, of Roluketchakat. The same wonderful feat of the Raven is related with many others by Ivan Petrof among the myths of the Thlinket tribes of South-east Alaska (see *A Compilation of Narratives of Explorations in Alaska*, Washington, Government Printing Office, 1900; p. 275).

Nŏ-tĕnā-ā-dlĕtsĭntsĕn.
The-second-making-of-man.

Kĕl, tōyōn nĕlāněn, tĕn'ă rūlāntĕ, rĕl' lĕdŏ-'ĕ.
A-young-man, rich who-is, men in-a-place-where-there are, or-so is-he-staying.

Mŏ-ŏzăkă tĕnĭhnă kūn rādādlĕtłé. Yūnān rāłtĕ tĕnăgōłŏn
His nephews four also are-staying. Across (the sea) and a-young-girl

tādlĕ'ŏnĕn, tĕn'ăyŭ kā tĕ-yīnĭlĕnă'ān, ŏkō nŏ-tālkān,
desirable, men for who-is-not-wishing, in-quest-of he-is-crossing-in-a-canoe,

tōyōn-mĕtlāă. Kĕlkăyŭ lŏnnă: "Nĕtsĕirŭłkŭt," rāyĕdĕrĕnī,
a-rich-man's daughter. Young-men many: "Let-us-take (marry) you," they-have-said-to-her,

īrŭ. Yūr tōyōnyŭ yān rāłte kŏ tĕ-yĕłnĭnă; ĭntĕ
in vain. Some rich-people only and these who-were-saying-so-to-her; but

"nĕdān," nī, tsŏ-rŏyān. Tsărāłtĕ kŏ kĕl kūn, kō tōyōn:
"No," she-says only. And this young-man also, this rich-man:

"Sī kĕ sŭŭ mŏkō nŏ-nĕskān tā," yītĕnāltlīn.
"I too perhaps in-quest-of-her I-canoe-across if," he-has-begun-to-think.

Tsĕyĕrŏtsĕ yŏkō nŏ-tālkān, mŏ-ŏzăkă tĕnĭhnă, mĕ
And-thus in-quest of-her he-has-begun-to-canoe-across, his-nephews four, him

yĕł tāldātłtsĕn. Eīt no-nīkān. Tsărāłtĕ: "Nĭtărătłkĕł tŏ-rŏr
with having-started. There he-canoed-across. And: "I shall-take-you in-order-that

kŏ no-nĕskān," yĕłnĭ, īrŭ. ĭntĕ: "Nĕ tlŏ tĕlărăs'ŏlă,"
here I-have-canoed-across," he-says-to-her, in-vain. But: "You giving-to I-shall-not-go,"

yĕłní. Tsĕyĕrŏtsĕ yĕt kŏtŏrmĕn na-rătāłlĕdātł. Kŏtā, tsēi yī
she-says-to-him. And thus there the-morrow they-started-back. Now, the-boat in

nā-rădĕyŏ, nōtłĭ tōbānă. Tōbānă rādlĕyŏ, tĕtłĕktsĕn,
he-has-stepped-again, riverwards on-the-beach. On-the-beach they-have-prepared, all,

kŏ mŏ-ŏzăyŭ yĕł, tsĕyĕrŏtsĕ rădādlĕtłé. Tŏrŭnŏ nĕñkŏrŏtĕn'ă lŏnnă
these his-nephews with, and-thus they-stay. Meanwhile people many

tlī nă-rătāłlĕdātł, tsĕ yūtŏkŏ tlōtŏkŏt rădādlĕtłé. Tsărāłtĕ
out have-come, and up on-top-of-the-bank they-stay. And

răbĕ-kāyī-rŏnādlĕ'ōt, ēi sōltān ŏkō nŏ-nĭdātł ĭrŭ nă.
they-were-ashamed, the a-woman in-quest-of have-crossed in-vain ones-who.

Tŏrŭnŏ yūtŏkŏ tĕnā tŏr sōltān lĕdŏ, tĕ-tĕn'ă yŏză răłtāłtsĕn,
Meanwhile up people among a-woman stands, her-child little she-carrying

nŭkŭdză'ān, kłé kĕłtŭkĕn. ŏdĕn rāłtĕ, kŏ yăkănyŏză: tā-ă-dĕtālnī:
a-s ll-one, still who-is-sucking. She and, this baby: she-began-to-say-to:

"ŏdĕn tŭ? Sōltān kā tā-rădĕnī tā, tŏ-tān kŏ sĕ-yŏdză?"
"Her what-of? A-woman wishing-for they-say if, what-does this my-child?"

yĕłni, rŏră yŏr-dĭlŭntsĕ ăntă-kŏ tĕ-yĕłnī. Arŭrŭyĕł
she-says-to-it, by-which she-fools-her it is she-says-o-to-her. At-that-moment

yūlāt!tlōn kŏ kĕlă, tsĕyĕrŏtsĕ tŏrl'ōyă yūnĕkă yŏkō
he-heard-her the young-man, and-thus the-paddle landwards in-quest-of-it

dŏlĕtlĭh: "Kŏ kătsĕ tŏ-lił!tăih, ēi tŏ-dīnĭnĕn," yĕłnī.
he-held-out: "This upon put-up, the one-whom-you-say," he-says-to-her.

Tsĕyĕrŏ yă kătsĕ tŏ-yīt!tăn. Tsĕyĕrŏtsĕ tĕ nĭtsĕnă ni-yĕnĭł!tān,
And-thus it upon she-placed-her-up. And thus himself behind he-placed-her,

kŏ kĕlă. Tsĕyĕrŏtsĕ ni-ko no-ĭdăkān, tsĕ kŏ mŏ-ŏzăkă
this young-man. And-thus off he-canoed-again, and those his-nephews

kūn ni-ko na-rătăł!lĕdātł. Tŏrŭnŏ ko tĕnăgōłŏn ko yŏkŏ
also off they-started. Meanwhile that young-girl the (one) in-quest-of-her

no-nīkăněn, tū ro no-tălyŏ. Ărŭrŭyĕł yūtł! tōbănă
he-canoed-across-who, water for she-started-down. Just-then riverwards on-the-beach

roni ĭlĕkōk. Tseyerotse: "Énă! se tł!ŭrkă roni nĕgĕkŏk!"
she-sank-in-the-mud. And thus: "Oh! oh! my knees I-have-sunk-in-the-ground,"

ni. Arurŭyeł: "Nĕn, nĕ dzĭyĭt!" yełni. Tseyerotse kŏtă, te
ays she. Whereupon: "You, your ears!" he-says-to-her. And thus now, her
(= it is your fault)

nĭdzĕt rū roni-ĭlĕkōk, arurŭyeł: "Énă! se nĭdzĕ ru
waist about she-sank-in-the-ground, whereupon: "Oh! oh! my waist about

roni nĕgĕkŏk!" ni. Arurŭyeł: "Nĕn, nĕ dzĭyĭt!" yełni.
I-have-sunk-in-the-ground," says-she. Whereupon: "You, your ears!" he-said-to-her.

Tseyerotse kūn te kŭłkĕn roni-ilekok, tseyero: "Enă! se kŭłkĕn
And-thus again her neck she-sank-in-the-ground, and-so: "Oh! oh! my neck

roni-negekok!" ni. Arurŭyeł te-yełni: "Nĕn, nĕ dzĭyĭt!"
I-have-sunk-in-the-ground," said she. Whereupon he-said-to-her: "You, your ears!"

Tseyerotse kŏtă, nĕn yĭtsĕ me-yeł-tăł!lĕnīk eī tenagołon; kota
And-so finally, the-earth from-the-inside-of she-was-pulled this girl; now

ma-rŏdĭtānă. Tŏkŏdĕkun ko kĕl rĕl'é: "Tŭ-rŭnăr,"
she-does-not-appear. Because that young-man probably: "May-it-happen-to-her,"

yŭdĕni, tse nĕ-nŏ-yĭnĭ-răl!ełtsĕ nĕn yĭtsĕ me-yeł-tăł!lĕnīk.
he-thinks-about-her, and as-he-wills the-earth from-the-inside-of she-has-been-dragged.

Arurŭyeł ko bān răłtĕ tł!ărŭz-lĕkă ătăn; ŏitĕ răłtĕ
And-then the her-mother on-the-other-hand brown-bears-tame she-has; them then

tōbăn nŏkŏ-dĭlŏ, tse ye kă ŭlnīk tse: "Ăltsĭh nĕtł!ĕł
on-the-beach down-she-brought, and their tails she-took-hold-of and: "Wind strong

tŭ-rŭnăr!" yełni, rałte ko kĕlă tū tĕ-tŏlĭł, nĭtsĕn.
let-it-be!" she-says-to-them, thus that young-man water will-do (drown) him, saying.

Tsarałte tār nŏ-rŏtălnŏr ēi ko tł!ărŭz-lĕkă, rūtł!ĕltsĕn,
And at-the-bottom they-began-to-dig the those brown-bears-tame, strongly,

tseyerotse tōt gĕtă rūtăltlāt, oite yeł rałte tū kĕtĕtĭ
and-thus waves big there-began-to-be, these with also the-water extremely

nĕkŏrtsĕ tĕ-deyŏr. Tseyerotse lŏ'ŏn dīdzăkăyĕ, lŏkŏlĕ, dza dĕnănī'ŏn
being big (high) it-became. And-thus a-stone slender, white, out he-took

ko kéla, ko yĕdĕnā'ŏihĕ. Tsaralte yĕdĕtsĕk, tseyerotse rŏntĕn
the young-man, which-he-was-carrying. And he-threw-it, and-thus suddenly

me nŏnlā kota tālrātł, tŏkăł rū rŏyăn; rūdzăkătĕn
him ahead-of now it-became-smooth, where-he-is-to-canoe only; in-a-narrow-space

ăntēi tālrātł, tŏrŭnŏ nīłkăatsĕn ralte kĕtĕtĭ tōt nĕkŏr
it-is-that it-has-become-smooth, whilst on-both-sides but very-much waves big

tĕ-tăn. Tsaralte ko mō-ŏzăkă tĕtłĕknă ralte tū tă-răbĕilŏr,
are-at-work. And those his-nephews all and water did (drowned) them,

mĭzĕnī. Ko yet kăyār rŏtănă yeł tĕtłĕkna tū tĕ-nĕlŏr. Rō kō
it-is-said. The there village people too all water did (drowned). Indeed that

yăkănyŏză bān, ŏitĕn yān ră-tŏ-kŭn yĕł kĕdŏ-răr̆ĕlĕt, răbĕizĕnī.
little-child's-mother, she only her husband with were-saved, they-are-said.

Ko kél ralte yĕtŏrŭnŏ răkăł, ralte tālrātł-rū
That young-man however in-the-meantime is-canoeing, but where-it-has-become smooth

rŏyăn. Īntĕ rōrō-īnāltsōn, kŏtă. Tū yān rūlān, tōt gĕtă yĕł.
only. But he-is-tired, at-last. Water only there-is, waves big with.

Tseyerotse kŭskăză ūnīłkōih, arurūyeł tōt tłīł-tŏkŏt rūtłkōih.
And-thus a-harpoon he-throws, and-then a-wave's crest he-struck.

Rŭyĕł rŏntĕn me-yeł-tłĕ-rŏdădlĕnĕn, rŭtłĕltsĕ tĕ-yīnĭlĕntsĕn. Kota,
Then suddenly he-fainted, (so) strongly being-thinking. Now,

tsēi yī dĕnŏlĕnĕn. Arurŭyeł rŏntĕn me-yeł-ro-nŏ-rŏdĕlĕt, rŭyĕł
the-boat in he-has-laid-his-face. But-then suddenly he-came-back-to-himself, then

tsĕbă tŏr rŏntĕn mīdŏy yī lĕdŏ: nĕñ nŏ-rūltlāt.
spruce-trees among unexpectedly the-canoe in he-is: the-ground has-begun-to-be-again.

Tōt tłīł-tŏkŏt rōtłkoīh rŭyĕł dłĕł ă-ltlăt, ei tōt gĕtă,
A-wave's crest he-struck then a-mountain it-became, the wave big,

Tōtsŏn-tō-kĕdātłkŏihtĕn, răzĕnīrū. Yĕt ralte
The-place-where-the-raven-hit-the-top, the-place-which-we-call. There moreover

rā-dădlĕlĭh ei kŭskăză, tseyerotse kūn tōt lōyĭt ra-dadlekat,
it-rebounded that harpoon, and-thus again a-wave on-the-end-of it-struck,

tse dłĕl ă-ltlăt, ralte ko Dīnălĕ mĭzĕnĭyĕ, tseyerotse
and a-mountain it-became, and this the-long-one which-we-call, and-then

yō yĭt ră-năłlĕyĕł. Tsĕnīł'ănă ēi kŏ rŏn, tĕyĕnyŭ yān
the-sky in it-stuck. We-do-not-see-it the these we the-shamans only
(we ourselves)

yĕnīł'an tsĕ ye-yeł-tĕnĭh. Tseyero ko kéla ralte yakanyoza
see-it and know-it. And-so this young-man however the-little-child

ye nĭtsĕn lĕdŏnĕn tse kĕītĕnăltōn, ruyeł ronten kota nekor:
him behind who-sits towards he-turned-his-eyes, then unexpectedly fully it-is-big:

tenagołon geta a-ltlat tse yū'ăn ni-nĭyŏ.
a-girl big it-has-become and apart she-is-gone (she has reached the sequestration time).

Tsă-răr'ănă yĕkă năddlĕ'ōn, ma-kăyī-rŏnădlĕ'ōt-tsĕn. Inte nĕzŭn:
Wherefore down she-looks, being-ashamed. But she-is-beautiful:

me nān sō kăntā. ŏitĕn tsĕn ăntēit nenkoroten'a no-dlĕtsĭn,
her face the-sun is-like. Her from it-is-that people were-made-again,

tŏkŏdĕkūn ko kĕl tsĕn mĕ-tĕn'ăkă rūltlāt. Tŏrŭnŏ
because this young-man from her-children there-began-to-be. Meanwhile

ko nŏtĕrnă rałte, ko kedo-rarélet mizenina, oina tsen rałte
those two also, those they-were-saved whom-we-say, them from also

yūnăn kūn neñkoroten'a no-dlĕtsĭn.
across-the-sea also people were-made-again.

THE SECOND MAKING OF MAN.

In a populous settlement there lived a rich youth and his four nephews. Far away, across the sea, there lived a very desirable young girl, but who did not care for men, and this girl he desired to marry. So, he undertook to cross over in his canoe, in order to propose to her. She was the daughter of a rich man, and many young men, rich ones only, had asked her hand, but she had rejected all their offers. To all proposals she invariably answered no. Now then, this young man began to think with himself, "If I were to go and propose, in my turn, perhaps she would accept me." And he started, his four nephews accompanying him in their own canoes. They arrived, and he said to her: "I have come across the water in order to take you to wife." But she answered: "I will not marry you."

And so, the next morning they made ready to start back. The young man was already in his boat, down on the beach; his nephews had packed all their things, and they were just ready to go. Many people had come out of their houses to see them going, and were standing in a crowd on top of the high bank. Among them there stood a woman carrying her young child on her arm, a baby, not yet weaned. This woman then, talking to her baby, said: "And what of this little girl? If they want a girl, why not take this little one of mine?" Of course, it was only baby talk. Still the young man, on hearing it, held out his paddle toward the woman, and said: "Put her upon this, the little one you speak of." And the woman did so. The young man placed the child behind him in the canoe, and off he paddled, his nephews following him.

Meanwhile the girl whom he had intended to marry came down to get water. But as she stepped on the soft mud at the water's edge, she began to sink down into it. "Oh! oh!" she cried, "here I am sinking up to my knees!" The young man retorted: "It is your own fault." And she sank still further, up to her waist, and exclaimed: "Oh! oh! now I am in up to my waist!" And he said again: "It is your own fault." By this time she had sunk up to her neck. "Oh! oh!" said she, "I am in up to my neck!" Again he replied: "It is your own fault!" and she disappeared, being dragged down under the ground. Very probably the young man caused this, by his very powerful thought: "Let it be so," thought he.

But the girl's mother had some tame brown bears, and seeing what had happened, she took them down the bank, to the water, and laying hold of their tails

she said to them: "Raise a strong wind." hoping that the young man might get drowned. The bears began to dig the bottom in a fury, and made huge waves. At the same time the water rose exceedingly. But the young man pulled out a thin white stone which he was carrying with him and threw it ahead. Whereupon the water became perfectly smooth over a narrow space ahead of him, just where he was to pass, whilst on both sides the waves were enormous and raging. All his nephews were drowned, and all the inhabitants of that village also perished in the waters, except the mother of the baby and her husband. These were the only two who escaped.

During this frightful storm the young man was paddling, always on the smooth water. But he was exhausted. Nothing but water and big waves, all over. Then he took a harpoon and threw it. It hit the crest of a wave. But the effort he had made to concentrate his thought whilst throwing the harpoon overpowered him; he fainted. His head bent down in the fore-part of the canoe. Soon after, however, he recovered himself, and oh wonder! there he was, in his canoe, in a forest of spruce-trees. The land had been formed again. The wave he had hit with his harpoon had become a mountain, it is the one we call: Totson-to-kedatłkoihten, *i.e.*, The-one-whose-top-was-hit-by-the-Raven. The harpoon had glanced on the moutain top, as the wave hardened into rock and had struck again another huge wave, changing it into a mountain; this is the one we call Dinale, *i.e.*, The-high-one. Again the harpoon made a bound on the hard rock, but this time it went up and stuck into the sky. We cannot see it, ourselves, though it is still there; the medicine-men only see it and know where it is.

The young man then turned towards the child whom he had left sitting behind his back, but she was no more a child, she was a grown-up girl, who had just reached the age of puberty; she had to be put apart (having had her first menstruation). Hence she felt very much ashamed, and kept her eyes cast down. But she was quite beautiful, with a face as bright as the sun.

It is from this woman that men were made anew to re-people the earth, for she had children from the young man. But the two who had been saved from the waters, as we have seen, these were the ancestors of the people beyond the seas.

Notes.

"Nŏ-tĕnă-ădlĕtsĭntsĕn." Literally, our being made again. This title alludes to the re-population of the earth, after its inhabitants had been destroyed by the waters. (There can be but little doubt that this story presents a tradition of the Deluge. One would be tempted to find in it also a remembrance of the crossing of the Red Sea.) Despite the obvious biblical parallels it seems to be a perfectly genuine Ten'a tradition, and the witness to its authenticity as a native record is the name of the mountain first struck by the harpoon: "Tōtsŏn-tō-kĕdātłkŏihtĕn." This name has been in use for ages past, and according to all probability, before the Russians ever penetrated into the

country, and it must, of all necessity, be connected to some such tradition as this. This story presents another of the Raven's exploits, although his name appears only in that of the mountain just mentioned, but this hint is sufficient to the Ten'a mind. It is in the lower dialect, and has been obtained from Michael, or Neraila, Torotenałnik, a native of the Nulato neighbourhood, uncommonly intelligent, and remarkably well versed in the old folk-lore. He told it to me twice, and the first version, which I was simply listening to, without writing, was much more detailed and lively than the second, which I wrote down. As soon as I took the pencil to write, his glow of enthusiasm vanished, and if it had not been for an old friendship, intensified by the fact that we were both far away from our homes and isolated in the midst of strangers, I could never have persuaded him to let me write his words. The Ten'a are quite unwilling to have their folk-lore couched in writing.

The title of this story evidently suggests that there exists among the Ten'a another tradition, viz., of the first making of man, but this I have not yet been able to obtain.

"tōyōn," a rich man. The term does not belong to the Ten'a, but is a Kamtchatkan word introduced by the Russians.

"rél'e, rél'." A word of rather vague meaning, used as an expletive, to just give a shade of undetermination to the phrase. The natives who speak some English, render it by "I guess," "I guess so," and this, taken in the sense it commonly has with miners, is the most exact translation.

"yūnăn, yūnănă." See the note on yūtłīt, after the story of the Raven. (p. 305.)

"tādlĕ'ŏnĕn," desirable, literally: highly esteemed, that is made much of.

"nĕtsĕirŭlkūt," let us take you. The Ten'a have no marriage ceremony: the man "takes" the woman; the woman "goes as a gift," *i.e.*, gives herself to the man, and the marriage is made.

"tă," if, placed after its clause, in the same way as the prepositions after their object.

"nĕ tlŏ tĕlărăs'ŏlă," literally: you-as-a gift-to I-will-not-go. The woman's consent to marriage being properly expressed as: go as a gift to the man.

"tŏ-tān," what does? equivalent to: what is the matter with? what is the objection to? etc.

"yor dĭlŭntsĕ," fooling with her (the baby), viz., talking child's talk to her.

"nĕn nĕ dzĭyĭt": "you, your ears," to mean: "your own fault." The phrase may be elliptical and stand for: "nen, ne dziyi rokalatsen," *i.e.*, "you, for your having no ears." The most common expression of blame among the Ten'a is: "kuliłtłona, me dziyi rokala": "he does not listen, he has no ears," because the foremost virtue, in their moral code, is obedience and a disposition to be easily persuaded.

"tłărŭz lĕkă," tame brown-bears. Literally: brown-bears-dogs. Any domestic animal, especially if used to draw, is distinguished from the wild one by the appellation "léka," dog. Thus when the Ten'a became acquainted with the

reindeer, which is, according to all appearances, the same species as the native caribou, "ranoya," they immediately named it "ranoy-léka." The brown or cinnamon bear, "tłarüza" (*Ursus Richardsonii*) is the fiercest animal known to the Ten'a.

"tū tĕ-tŏlīl," water will do him. This is the common expression for drowning: water does me, means: I am being drowned.

"lŏ'ŏn dīdzăkăyĕ, lŏkŏle," a thin white stone. Such stones are still considered as having wonderful powers, and used as amulets. These are called "madza."

"ko yăkănyozăbān," etc. That this couple should have escaped the universal destruction of mankind, seems to be a detail added to the story when the Ten'a became aware of the existence of other people beyond the seas. If it is really an interpolation, it is cleverly contrived.

Tōtsōn-tŏ-kĕdātłkŏihtĕn." This mountain which I judge to be less than 2,000 feet high, belongs to the Kayar range and it lies about S.S.E. of Nulato, at some 50 miles from this place, whence it cannot be seen. It is covered with reindeer moss, and used to be a favourite resort of the caribou, and consequently a frequented hunting ground. It is therefore well-known, under this name, to the whole tribe.

"Dīnălĕ," "The high thing," really deserves its name, for it is no other than Mt. McKinley, 20,300 feet high, the highest peak on the continent. It cannot be seen from Nulato, but is well known to the nomadic Ten'a.

"yū'ăn ni nĭyŏ," she went apart: the phrase, by its allusion to a well-established custom, is equivalent to: she is in the first month from her first menstruation.

Nĕnĕlĕ'ĭn.

The Bugbear.

Yūrdŏnă tĕnă-dzŏr-tŏ-rŭtā Kōdīlkăkăt. Eit rałte sōltăn
A-long-time-ago we-were-famished at-Kodilkakat. There then a woman

yū'ăn lĕdŏ, tsăr-tlăk nĕ-dāl'ŏn. Eit rałte sălnŏ,
apart stays, the-puberty-cap she wears. There then we-are-gone-on-the-hunt

rŏihtŏr rŏrĕlĕt ru. Kota, kłĕrŭlŭ-kŏkă. Rałte tena-dzor-to-ruta.
the-winter has-passed at-the-time-when. Now, on-the-hard-crust. And we-are-starving.

Eit rałte mŏ-kŭn ăn-nŏ-tĕd'ŏih, tŏrŭnŏ rałte yăr ledo ko
Then also her-husband goes-hunting, whilst on-the-other-hand at-home she stays this

soltan. Tsarałte kota tŏ-rŏdŏlĕł; kota nūdār lĕdŏn kălă.
woman. And presently it-is-thawing; already the-snow some is-not.

Kĕłŏkĕ-nĕlĕdŏrŭnă yĕn-ĭtlĭ, băabă ădēn. Ră tŏ'-ŏt yĕł, ră
Twenty-persons have-perished, food for-want-of. They his-wife with, they

tŏ-kŭn yĕł rŏyăn rŏrŏnō. Ko mo-kŭn an-no-tałleyo. No-ĭdĕyŏ.
her-husband with only are-living. This her-husband again-went-hunting He-came-back.

Ko, ronte mŏ-'ŏt kălă, ko ronten kō-yĕdĕłkŏnĕ yān lĕtlō.
Here, unexpectedly his-wife is-not, here unexpectedly the-things-she-sews only lie.

Tseyerotse yŏkō nŏ-rŏlĕyăr, īrŭ, ĭntĕ ra-năłlĕnīk Kota,
And-thus in-quest-of-her he-searches, in-vain, but he-failed. It-is-all-over,

Nĕnĕlĕ'ĭn a-ltlāt, ko soltan. Tseyerotse kota tŏ-rŏdĕrĕlĕt; kota łū
a-bugbear she-has-become, this woman. And-thus already it-has-thawed; now ice

kălă, tū yān rūlān. Tseyerotse ko mo-kŭn an-nŏ-tĕdăkăih,
there-is-not, water only there-is. And-thus this her-husband goes-hunting-in-his-canoe,

bĕkĕnăl ŏkō. Eit rałte bĕkĕnăl tĕ-ł'ăn, ko mo-kŭn. Nī-rŏ-ăkăih
musk-rats in-quest-of. Then and musk-rats he-catches, this her-husband. He-lands

tŏr, mĕł-nĕlĕtĕn. ŏrŏtŏr răłtĕ bĕkĕnăl nŏtĕrkĕ tĕłtĭhtł. Tseyerotse kĕlŏkĕ
when, he-sleeps. Then also musk-rats two he-roasts. And-so one

ă'ŏn, kĕłŏkĕ rałte nī-ăłtăih. Tŏrŭnŏ mĕł-nĕlĕtĕn. Dza-ălĕk; kŏ,
he-eats, one but he-puts-aside. Meanwhile he-sleeps. He-awakes; that,

tān ni-yĕrĕłtākĕ bĕkĕnăl kălă. Yĭłkĕk, łōn! ko mo-'ot,
(he-knows), which-he-has-put-aside musk-rat there-is-not. She-takes-it, oh! that his-wife,

ko nĕnĕlĕ'ĭn a-ltlătĕn. Tseyerotse rŏlŏntĕn yerotse tĕ-tăn, ko
the a-bugbear who-has-become. And-so many-times thus he-acts, this

mo-kŭn. Kota, kĕt'ōn dĕnātłyōn, tseyerotse kota băabă tātłlīt.
her-husband. Now the-leaves have-grown, and-then that-is-all the-food she-leaves.

Kota, ătłĕyĕ-łōn yūdŏo tălyŏ ko mo-'ot yān; toruno ko mo-kŭn
Now, in-reality down-river she-is-gone the his-wife only; meanwhile the her-husband

Kōdīlkăkăt ledo. Ătsăr tsŏ-rŏyăn.
at-Kodilkakat stays. He-weeps all-the-time.

Kota, nĕnĕlĕ'ĭn kŏnōn nĭyŏ, sānlăy tŏr, nŭlără
Now, a-bugbear to-the-house has-come, summer-salmon at-the-time-of, dog-salmon

tłŏrŏn. Kota rałte kŭn ŏtŏr tăldŏ, rałte tłĕtăł tŏr
after. Now also the-fire near-by she-has-begun to stay, and night when-it-is

baaba āntsĕ tātłzŭk; kĕdīnāltł'īh. Tseyerotse
food from-the-opposite-side she-has-begun-to-take; she-has-begun-to-steal-food. And-so

ma-ka-rūlĕnīk, tsĕyĕrŏtsărăłtĕ tĕyĕnyŭ ră yŏr kŭn ără
we-have-found-her-out, and-also the-medicine-men they for-her the-fire near-to

ni-nīdātł, tseyerotse yī-rēitātłlĕyīk, rałte răyītŏłkĕł tŏ-rŏrŏn.
have-come, and-so they-began-to-make-medicine, and-this they-may-catch-her in-order-that.

Īrŭ: răyĕ-năłlĕnīk. Kota, kĕlkăyŭ nĭłkŏzĕnălnă, ĕină rałte kŭn
In-vain: they-failed (to-catch) her. Then, young-men ten, they also the-fire

kābără ni-nidatł. Tsarałte tłĕtĕ rŏtăltlĕt rŭyĕł yū'ŭ ronten
around gathered. And the-night has-begun-to-pass when over-there suddenly

ni-nŏ-tsŏt'ŭstł, ătłĕyĕ-łō ko soltan łō ko tĕ-tănĕn. Iru:
some-one-is-coming-again, and-it-was that woman indeed the one-doing-so. In vain:

răyĭłkĕlă. Kota, tĕkĕn-yī kŏnōn tsŏrŏtătłtsĭn. Kota, baaba
they-did-not-catch-her. Then, logs-in a-house we-began-to-build. Now the-food
(a log-house)

yŭyŏkŭ yăr royan ni-tsĕnĭlŏ, ko yăr tsŏrŭtłtsĭntĕn ni-tsenilo.
on-the-floor in-the-house only we-placed, (in) that house which-we-made we-placed (it).

Ăkŏskă tsŏrŭtłtsĭn; yĕt rałte tĕ-kĕtsĕltlŭn, — kăbīł, — tseyerotse rałte
A-window we-made; there then we-laid-a-snare, — a-noose, — and also

kĕlkăyu mă-răză-rūlānnă tŏrnă tŏdzārkāt ni-nidatł, kŏ nĕrălnĭhă
young-men who-had-a-penis three in-a-corner came, the rawhide

yĭ-rūnĭtŭntsĕn. Ruyeł ronten rōr dītădlĕnĭk, baaba ītătłkŭttsĕn,
holding. Then suddenly through she-put-her-hand, food beginning-to-take

toruno răyīltlŭih. Kota, nō-kĕtsĕrĕltăn. "Kota tsūlnīk, tĕn'ă
during-which they-noosed-her. Then, we-shouted. "Now we-have-got-her, men

tĕtłĕkă." Kota rałte, yĭdō tsĕnĭttăn: "Kota rałte tena ro'ot lără,"
all." Then and in we-brought-her: "Now then our wife to-be,"

rayełni. Yar rā-rŭtłnăr: kĕtĕtĭ mā-rūlĕtsŏł, ŏrŏdōn nenle'in
they-say-of-her. The-house she-broke: extremely she-is-strong, long-ago a-hobgoblin

a-ltlat ĭn'ĕn, łōn. Kota rałte nō-nŏ-rŏtădlĕyāk, yăkănyŏză
she-has-become although, strange. Now then she-began-to-have-children, babies

nă-ăltăih. Kota rałte tĕn'ă-rulantse tŏ-rŭlŏr. Tseyerotsarałte:
she-brings-forth. Now then there-being-people she-has-made-the-place. And-thus-and:

"Nĕnĕlĕ'ĭrktĕn ră-dŏrnī," ni ko ŏdĕn, ko soltan. "Kōdīlkăkăt
"Place-of-the-goblin call it," says (the) she, the woman. "Of-Kodilkakat

rŏtănă ĕslănntsĕ ăntă-kōn. Yăkăt sĕ-dzŏr-tŏ-rŭtā, tseyerotse
an-inhabitant I-being so-it-is. There I-was-starving, and-so

sĭltŏ-nĕs'ŏ," nī. "Kota Kodilkakat rotana tŏrlă,"
I-went-away-losing (the place)," says-she. "Now of-Kodilkakat people you-shall-be,"

tĕ-tĕn'ăkă ălnī; "tsarałte Kodilkakat rotana nōrł'ān tŏr rałte yŏr
her-children she-says-to; "and of-Kodilkakat people you-see when, then your

dzāy yĕt răbŏr-tĕ-yĭnŏrlĕn, kĕtĕtĭ tă-răbŭdŏrnī: yăkălă yŏr lĕdŏn rēilān.
heart with love-them, much esteem-them: behold your brethren they-are.

Ko isi nĭłlŏttĕn rŏtănă ă-lĕslăttsĕ ăntā-kōn," rałte ni.
Now indeed (of)-a-distant-place inhabitant I-having-become so-it-is," and says-she.

Kota, ten'a atłtsin ko nenele'in, tsarałte ten'a rulan. Tsarałte kota,
Then, men she-made that bugbear, and-so men there-are. And then,

Kodilkakat-rotana yet a-rultlat. Kota Kodilkakat kă-to-ruta. Kota.
Kodilkakat-people there there-became. Now Kodilkakat it-is-like. The-end.

The Bugbear or the Goblin.

A long time ago there was a famine at Kodilkakat; a woman was then at the period of her separation; she stayed apart wearing the cap of puberty. People had gone out on the spring hunt; the winter was at its end, and the travelling was done on the hard crust of the snow. But all were starving. The woman's husband was going out on short hunting excursions, while she stayed at home. The thaw came; the snow began to disappear. Twenty people had already died of starvation. That woman and her husband were now the only ones left. One day the husband went on one of his hunting trips. When he came back what was his astonishment. His wife had disappeared, her sewing only was to be found in

the house. He searched everywhere, but could not find her. The woman had become a goblin.

The snow had thawed away; there was no more ice, the river was free. The husband began to go hunting in his canoe. He was hunting musk-rats, and catching some every time. When he came to land, he slept. At those times he used to roast two musk-rats, and after having eaten one, he put the other aside and went to sleep. On waking up he always found that the musk-rat, which he knew very well that he had put aside, had disappeared. His wife was taking them, after the manner of the goblins. Many a time did this happen. But when the trees were covered with new leaves, she ceased to come and get her food. She had gone to the lower river, far away, and the husband remained alone at Kodilkakat. He was crying all the time. (The scene is shifted to Koserefsky.) Ah! a goblin has come into the house, after the run of the dog-salmon, whilst the summer-salmon are running. It stays around the camp, and at nights it takes the food from the rack; it steals the food. People have found it out, and the medicine-men have gathered around the fire to conjure against it: they performed their incantations to catch the goblin, but without success: they could not catch it. Then ten of the young men also gathered at the fire-place, and sat up during the night. When it came near to morning they were aware that someone was coming near to them; it was the woman, but they failed to catch her.

Then the people built a log-house, and placed all the food inside of it, on the ground. They also cut a window-like opening in it, and there they put a noose, to catch her. Three young men, who had reached the age of puberty, stood in a corner, holding the end of the raw hide which was to noose the goblin. This one came and passing her hand through the opening to get hold of the food, was caught by the three young males pulling at the string. They uttered a great shout of triumph: "We have got her; come, all of you!" And they brought her into the house. "Oh! she will be a wife among us!" they said. She was still very strong, so strong that she pulled down the house, even though she had been a goblin for a long time.

She had many children, and through her the place became quite populous. "You shall call this 'the-Goblin's-place,'" said she. "I am from Kodilkakat, in truth I am; but because I was starving there, I left the place. As for you," she said to her children, "you shall be Kodilkakat people. When you shall see any of the Kodilkakat people, you shall love them with a sincere heart, you shall make much of them, for they are brothers to you. Indeed, I have settled in a place very distant from my own." So she said.

And thus she brought forth children, and the place was peopled, and indeed with Kodilkakat people, so that it is a new Kodilkakat.—The end.

NOTES.

"Nĕnĕlĕ'ĭn," pronounced in upper dialect: "nĕnlĕ'ĭn," and in lower dialect: "nĕnĕl'ĭn," the lower dialect, however, commonly uses the term "Nedōron,"

to designate beings of this kind. They are described as having the human form; with a hairy skin and long claw-like nails. They are supposed to abide in the neighbourhood of camps, and to come at nights to steal food, especially the salmon which is put up on the racks to dry. They generally chose the best morsels. The belief in the "Nenele'in" enables the Ten'a to account for many petty thefts committed at night, mostly by reckless young men or hungry old women: the Nenele'in has done the deed and the reputation of all the tribesmen is safe. These beings are not so bold when the men are in the camp, but when these are away hunting and only the women remain at home they are said to have no fear. Many a time I was begged to stop for a few nights at the summer camp of Nikulirkakat, some eight miles below Nulato, whilst the men were hunting, that my presence might scare away the "Nedoron" which is known to haunt the place. The actual belief is that the one who sees a "Nedoron" or "Nenele'in" must die, unless he has nerve enough to kill it, tear open its belly and devour its liver. It is well known in Ten'a circles that Ketok'ona, an inhabitant of Kaltag, who died some 10 or 15 years ago, thus treated two of these goblins, and managed in this way to save his life. The man is also known to have killed a few other Indians, and it is to be presumed that a lie would not burden his conscience more than a murder, but this a Ten'a does not see. The Nenele'in are supposed to be transformed men or women, who, as in this tale, after running away from their homes, became goblins.

"Kōdīlkăkăt."—A place of foremost importance in the traditions of the Koyukuk Indians, and generally referred to as a sort of happy land, the place of great hunts and of warlike people. The name means; "mouth of the Kodil River" this being an affluent of the Koyukuk. The river itself is called "Kōdīlnō," and its head-waters, "Kōdīldlōt.

"Yū'ăn lĕdŏ."—stays apart, viz., after her first menstruation. It may seem strange, then, that she had a husband. But this was by no means uncommon, in the old times. Children were matched together before puberty, and only began to cohabit when old enough to do so.

"tsăr-tlăk," the puberty cap. This is not necessarily a special cap, but may be only the common parkie-hood. Only the mode of wearing it distinguishes it from the everyday headgear. It must cover the forehead and almost the eyes.

"klĕrŭlŭ-kŏkă," in lower dialect: "tlŏrŭlŭ-kŏkă." The hard crust. In spring, the sun partly thaws the surface of the snow during the day, but this cools again during the night, and, in the early hours of the morning, freezes into a hard crust, strong enough to allow a person to walk over it without breaking through.

"kĕtŏkĕ-nĕldŏrŭnă," Twenty, *i.e.*, literally, "one count," the "count" being made on the fingers and toes.

"sānlăy tŏr, nūlără tlŏrōn," literally: during the summer-salmon, after the

dog-salmon. The salmon begins to run in June; the first run is that of the king-salmon (Oncorhynchus tschawytscha); next come the dog-salmon (Oncorhynchus nerka); then the summer-salmon or silver-salmon (Oncorhynchus milktschitch). These scientific and ultra-barbarous names are borrowed from David S. Jordan, in an article on "The Trout and Salmon of the Pacific Coast," in the *Pacific Monthly*.

"antse," the opposite side, the fish-rack, on which the fish are put to dry is on the side of the camp-fire opposite to the one where people sit and chat.

"tĕkĕn yī kŏnōn," a house in the logs, *i.e.*, a log-house. It might also mean a hut made of small round poles, but, in our days, it is simply understood as a log-cabin.

"ăkŏskă," a window, a modern term, borrowed from the Russians. The primitive text probably had: a hole, an aperture.

"tĕnă rŏ-'ŏt lără," to be our wife. This must not be understood as meaning that she would be a common wife to all or several. Simultaneous polyandry was unknown to the Ten'a, and they had no idea of prostitutes. When the Ten'a who worked on the Yukon River steamboats first saw this imported product of our civilisation, in Dawson, their astonishment was only equalled by my disgust at hearing them jump at the conclusion that all white women were alike, and asking me whether my own people and relatives were the same.

"Nĕnĕlĕ'irktēn," shortened to "Nĕlĕ'ĭrktĕn," is the name by which the Ten'a designated Koserefsky, before the whites had introduced the latter appellation.

This story is well accredited and believed among the Ten'a of the upper tribe, and they often appeal to it to accentuate their relationship to those of the lower tribe. I had occasion to write a letter for Thomas Dat'on of Koyukuk Station, to his son at the Koserefky Mission School, in which, after giving much good and rational advice, he went on saying: "Be kind to the people of Koserefsky; even though their manners and language would appear ridiculous to you, remember that they are brothers to you through the Kodilkakat woman who migrated there in the old times," etc.

Tĕlĕt-Tĕn'ă.
The-Eagle-Man.

Yūtłūr	sān-kăkā	tŏkŏrŏldălă	mĭzĕnĭyĕ,	tłărŭ	sōltăn	zūŭ
Down-on-the-beach	the-small-bird	woodpecker	which-we-call,	at-first	a-woman	fair

mŏkŭn	rēlă.	Kĕłte	sān	yĕ	yĕł	sān	rĕlĕt, tsĕyĕrŏtsĕ
her-husband	it-was.	Once	a-summer	her	with	summer	he-spent, and-then

rūlkŏtł,	tseyerotse	kĕtĕn	soltan	kā	tĕ-dĕyŏr,	tłaru mŏr-yĕrĕdŏ'ōn.
it-froze,	and-then	another	woman	wishing	he-became,	at-first with-whom-he-had-lived.

Kūn tĕnăgŏłōn zuu rŏ rĕdŏ, tłaru, tse ĕitĕn kā tĕ-nŏ-dēyŏr.
Also a-girl fair with he-had-lived, at-first, and this-one wishing he-again-became.

Tseyerotse ko mo-'ot yor tłi īlĕkăr. Tōnăn-tōdōŏ
And-then that his-wife from-him outdoors ran-away. Across-downstream

no-nĭyŏ, tse eit yuūr rä'ŏł. Tłŏtnă ro lyŏ
she-crossed, and there at-random she-was-walking. The-south-bank up she-went

tŏrŭnŏ, ăltsĭh ŏkō răn'ăih, răyĕłnī. Tseyerotse tĕkĕn rulanten, ărū
while, the-wind for she-speaks, they-say-of-her. And-so wood where-there-is, there

rărătăkă rā-dĕnānīłkŏtł, tse ałtsih yĕkă rä'oł. Eit mĕnkā
in-the-intervals the-wind-blew, and the-wind under she-walked. There lake

rĕl'-kŏ rā-dī'ŏn-ĕ; eit tŏbănă no-niyo. Tseyerotse tōbăn
some-one she-reached; there on-the-beach she-crossed. And-so on-the-beach

ko-ĭd'ōih. Eit nărălŭ-kŏnōn rŏtłă eit rél'-ko rūŏn-é; eit
she-walks-about. There a-winter-house wretched there somehow she-found; there

rél'-ko ĭdŏ nĭyŏ-'é. Eit ko-yŭyŏkŏ ko-nō-dădlĕnīk iru, inte nĕñkŏrŏtĕn'a
somehow into she-went. There on-the-ground she-groped-about in-vain, but people

īłtălă. Tse ko yŭtŏkŏ ro ko no-dădlĕbĕdzĕ, eite kătsĕ kūn
she-found-not. And the above (you-know) the bunk (or shelf), that on-top-of also

ko-no-dadlenik, tsărăł yĕkă. Ruyeł rūlĕtsĕł kă tŏ-rūtătĕ
she-groped-about, the-darkness under. Then it-is-wet like it-is-where

rŏkă-dīlĕnĭk, ărŭrŭyĕł ronten kĕdŏ-tsĕdĕtădlĕrăł: "Hŭm!... hŭm!...
she-touched, just-then suddenly some-one-was-scared: "Hum!... hum!...

.. hŭm!" tsĕdĕnī, ĭtłăk. Tseyerotse dza-dŏlĕrăł, tseyerotse tłi
.. hum!" we-say, it-is-heard. And-so she-was-scared, and-so out

no-īlĕrăł, tse ōdĕ dzān kŏlĕkŏk. Tse yŭr răltsĕn, kota nō-kĕdī'ŏn.
she-fled-back, and the-whole day she-ran. And toward evening, already the-sun-is-set.

Tseyerotse rél' kŭn rulante rél' ni-ĭlĕkŏk, tse tūur ăd-ŏrō
And-so fire-wood where-there-is she-arrived-running, and there herself-for

rŏdīlĕkōn. Răltsĕn rŏdātłkōn tse ralтsen tăkă lĕdŏ, ărŭrŭyĕł
she-made-a-fire. At-evening she-keeps-fire-going and at-evening up she-stays, at-that-time

ma-kă rŏtsĕ ronten tsŏ'ŏstł ĭtłăk; ătlĕyĕ-łe
her-tracks from-the-direction-of unexpectedly we-are-coming it-is-heard; and-it-was
(someone-is-coming)

ko mĕnkā rā-dĭlĕkŏktĕn eit yăr lĕdŏnĕn, tsīkălă; tse
that lake whereto-she-had-run (in) that house the-one-who-stays, an-old-man; and

ko ma ka yŏ'ŏlĕn yĕł'ŏsk, aruruyeł ronten: "Ănłă!
this her after who-was-coming sneezes, whereupon suddenly: "Near-ahead!

ma-ka-ras'ole no-dĭnī"; tsedeni, itłak. Aruruyeł kota
the-thing-after-which-I-am-going you-foretell"; we-say, it-is-heard. Whereupon then
(= one-says)

īnădlĕkēt, tse tŏ'ŏ me tsŏrŏtĭyīt, ko tłi-nă-ăd'ŏihtĕn, nŭdār
she-began-to-fear, and over her door-at, the place-where-she-goes-out, snow

yī rél'-ko rŏdĭłkōnĕ, ko tenagołon, ni-tsĕnī'ōts. Ye tse
in it-is-that she-built-a-fire, this girl, we-stopped. Him toward
(= someone-stopped)

kēīnāltōn, aruruyeł tŏ'ŏ rŏntĕ tsĭkāl tłār ronte
she-cast-her-eyes, and-then over-there oh! an-old-man decrepit unexpectedly

me tsorotiyi lă'ăn. Tseyerotse ko to'o tsĭkāl yĕnīł'ān: "Nor
her door-at stands. And-then that over-there old-man looks-at-her: "There

na kala rūzŭntsĕ sŏrŏ tŭ-rŭlăr," mĭzĕnī. "Kĕn-ē, tsĭkāł?
(by) your side nicely for-me prepare-a-place," we-say-to-her. "What-is-it, old-man?

Tuūr sa kala, sŏr nĭłkŏotsĕnă ĭsĭ tĕkĕn rūlān," yełni, ko
Over-here (by) my side of-me on-both-sides indeed sticks there-are," she-says-to-him, this

zī-ăłŏŏt. "Untĕ nŏnĕko, ne nŏrtsĕnă." "Kĕn-ē, tsikał?
untruthfully. "Well, then, landward, you behind." "What-is-it, old-man?

Tŏnĕkŏ se nŏrtsĕnă isi kūn teken rulan," yełni, ko zi-ăłŏŏt.
Landward me behind indeed also sticks there-are," she-says-to-him, this untruthfully.

Aruruyeł tsikal tĕ-nŏ-yĕdĕdĕnĭ: "Untĕ nŏnĕtsĕn, nĕ kŏŏtsĕn."
Whereupon the-old-man says-to-her-again: "But-then on-the-other-side, you opposite."

Tseyerotse tonetse te kootsen rél' ruzuntse to-rulor.
And-thus on-the-other-side herself opposite, I-suppose, nicely she-prepared-a-place.

Tseyerotse tonetse ye kootse ni-niyo ei tsīkălă. Eit rél' yuur răłtsĕn
And-so on-the-other-side her opposite he-went the old-man. There then about evening

mĕł ără nō-nŏ-dīnădlĕlĭh ko tĕnăgŏłōn. Tseyerotse mĕł-rĕinădlĕtĕn rél'-é;
sleep by she-began-to-nod the girl. And-so they-slept somewhat;

aruruyeł tonetse me kootse tăkă-ădă-nŏ-sĕłnĭh. Tseyerotse
but-then on-the-other-side her opposite we-get-up (one-gets-up). And-so

tăkă ădă-nă-ăłtsĕk, tse tĕkĕn nił tse no-detełdihtł; ŏrŏtsĕ-rŏră
she-jumps-up, and sticks each-other against she-rubs; by-this-means

rałte rodatłkon, ko nĕlĕkĕttsĕn. Tse rél' ko tłĕtĕ rélnik:
and she-makes-fire, thus being-afraid. And then thus the-night she-passed:

rŏdātłkŏn-tsĕ-rŏră mĕł-nīlĕtĕlă. Tseyerotse yītłkōn, tseyerotse nŏ-łlĕtlŭn,
by-keeping-up-the-fire she-did-not-sleep. And-so it-dawned, and-so she-dressed-up,

tseyerotse rél': "Tsĭkāł, tŏ-nĕtā-'é nŏr nă kăkĕl tłăkă mŏ-rŭlnăr
and-so then: "Old-man, what-is-the-matter that your clothes shabby they-are-broken

łŏné?" yełni. Tseyerotse rél'é ta kăkĕlă tenagołon tlo-rĕlŏ: "Sŏrō
oh?" she-said-to-him. And-so then his clothes (to) the-girl he-gave: "For-me

nŏ-rĕkōr; tŏ-nĕtăyĕ-kūn tŏ-dĭni?" Tseyerotse kŭn mŭ-rūlănĕ
mend (them); what-is-the-matter-with you-say-so?" And-so sticks which-were-there

dălĕkŏnĕ yĕ nŏrŭłyī dĕrĕłdātł, tseyerotsarałte ko tenagołon ko te
burning them in-the-midst-of she-thrust, and-then-also the girl the herself

tlŏyăr ni-yīlĕyāih, rŏră yĕrŏdĭłkōn. Tseyerotse: "Tsĭkāł,
behind she-puts-them, by-which she-burnt-them-out. And-then: "Old-man,

to-neta-'é nor ne tăagă tłăkă kūn mo-rulnar łoné?" Tseyerotse te
what-is-the-matter that your parkie shabby also it-is-broken oh!" And-so his

tăagă kūn tenagołon tlo-rĕłkuł. Tseyerotse yerodiłkon. ŏrŏtsĕ-rŏră ye
parkie also (to) the-girl he-gave. And-so she-burnt-it-up. By-this-means his

kăkĕn yeł tĕtłĕktsĕ rodiłkon. Tseyerotse tsĭkăł kēintădĕ-ledo; tăkă
shoes also entirely she-burnt-up. And-so the-old-man is-naked; up

ledo ădĕ-kĕdĭłtāntsĕn, ko tenagołon nīł'ănă toruno. Inte
he-stands, warming-himself-by-the-fire, the girl he-does-not-look-at whilst. But

ko dīnādlĕkōtł, tseyerotse: "Kĕkĕł dāłĕkŏnĕ dāłłĕkĕt! Ro-to-netaye
then it-began-to-blow, and-so: "Clothes burnt it-smells! How-is-it-that

kĕkĕł kŏnă se yi dĕtāłkōn?" yełni. "Tsĭkał, to-neta
clothes burnt me in have-begun-to-burn?" he-says-to-her. "Old-man, how-is

ko se tāaga kŭn nō-dŏłĕnĕn: dīkŏn; ĕitĕ ănteitĕ tĕ-nĕtāyĕ,"
this my parkie in-the-fire down-has-fallen; it-is-burnt; this it-is which-is-so,"

yełni. Toruno ko ye kĕkĕlă rodiłkon. Tseyerotse:
she-said-to-him. Meanwhile those his clothes she-has-burnt-up. And-so:

"Tsikał, tłā tŏ'ŏ kŭn ŏkō tłi-tărăs'ŏł," ni, zī ałōot.
"Old-man, a-moment there wood in-quest-of out-I-shall-go," she-says, untruthfully.

Tseyerotse nŏ'ŏ tłī tālyŏ, nŏ-łlĕtlŭntsĕn, tsikał yenił'ana
And-thus there out she-went, being-dressed, the-old-man does-not-see-her

toruno, tse tŏ rŏtłă yōłrŏlĕ nă-ătłyĕł, tseyerotse rél'-ko
whilst, and her sled which-she-was-carrying she-seized, and-so then

tādlĕrăl-é. Ko tsikal a-nĕlĕkĕt, tse yur dzān kŏlĕrăł, ŏdĕ
she-fled. The old-man she-fears, and about the-day she-ran, all-along

dzān rŏlŏră. Tse yur ménka ra-dilekok, tse kĕtsăn
the-day entire. And a-certain lake she-reached-running, and grass

rulan. Kărărătăkă ni-ko talyo, tse kĕtsăn łŏră
there-is. Between (the bunches) off-out she-went, and the-grass on-the-tops-of

kĕtăltŏn, tĕkĕn yĕdōtĭlĕ ără. ŏrŏtsĕ-rŏră altsih
she-stretched-a-stick, the-stick which-she-carries by-means-of. By-this-means the-wind

oko răn'ăih. Tseyerotse rā-dĕnănīłkŏtł nūdăr yĕł, ko ketsan
in-quest-of she-speaks. And-so it-blew snow with, this grass

ră'ănă. Tseyerotse yūnănă no-ilekok, tse aru rărătăkă
on-account-of. And-so to-the-other-side she-ran-across, and there in-the-space

ko nāltăn é. Inte kłé nĕłtăihă toruno ma ka dza
there she-went-to-bed. But still she-does-not-lie-down while, her after out

īlĕkŏkĕn nĕrĕł'ān. Kĕkĕl ădĕn yĕrŏtsĕ rălĕkŏihtł, tseyerotse tă
the-one-who-came she-saw. Clothes without thus he-is-running, and-so his

kă a-no-no-dĕlĭs: "Ko-rŏră să kă īnŏlĕkŭr," yełni; tse
feet on-he-waters: "In-this-way my feet will-be-warm," he-says-of-it; and

nō-nŏ-dĕzĭł, ĭtłăk: "é! ătĕtĕ łō tŏ-rŏnălĕgĕlĭt ę?" Tseyerotse
he-shouts, it-is-heard: "Hey! truly is-it that-I-have-got-it?" And-so

nōnăn-nŏtsĕnă nāltān, ko tenagołon, tse dĕnĕlĕtłĭz kāntăyĕ,
across-on-the-other-side she-lay-down the girl, and a-bell a-thing-like,

rănŏy kălĕkŭnă, yĕł roni-kĕdĕrĕtlīh, tseyerotse ŏdĕ tłĕtā kĕdĕnĕlĕtłĭs
deer's hoofs with she-planted-a-stick, and-thus all-along the-night it-rings

kădĕnī, ode tłeta dŏ-dĕrĕłnik, ko altsih. Tseyerotse kŏtŏrmĕn
it-sounds-like, all-along the-night it-made-noise that wind. And-so in-the-morning

kŏtă̆ yītłkon. Tseyerotse ro nă̆-răděyŏ. ă̆rŭrŭyĕł rŏntĕn rā-kĕdi'ŏn,
finally it-dawned. And-so out she-came-again. Then the-sun-shines,

tseyerotse ko tān yunotse ni-niyo ru, aru
and-so there, as-she-knows, on-the-other-side she-has-stopped where, there

kă̆r nŏ-tă̆łlĕyŏ ko tenagołon. Tse yur tō-nĭdzĕt ni-nă̆-ră̆d'ŏł,
back again-she-went that girl. And about water-middle she-comes-near,

aruruyeł ko no-niyo ru ma ka ronte tsĕltă̆n, ă̆tłĕyĕ-łō
then there she-had-gone where her after we-lie-down and-it-is
(= one-is-lying)

ko tsĭkāł, ko rā-dĭtsīh-tse rora ă̆tłĕtĕn, łōn. Tă̆kă̆
that old-man, the blowing by-means-of he-is-frozen.

dă̆dĕbĕt toruno łĕtă̆n; eit rél' ko mă̆ ră̆ză̆ ă̆tłă̆tĕnĕ taka tā
tĕ-nĕtă̆: eit rél' nātłrŏł, aruruyeł ronten yŏlīł

ītōk Eit-rotse-tŏnłă̆ kota dłĕł tĕ niyo. Eit tă̆ră̆yŭk
Henceforth then mountains amidst she-came. There the-salt-sea

kă̆-tōbă̆nă̆ ra-dĭyŏ. Eit rél' kă̆yār rulante niyo. Eit-rotse
shore she-reached. There then a-camp where-there-is she-came. There-from

kŏtŏrmĕn yĕtĕłkōih, tseyerotsarałte mŏr tłi nŏ-tsŏrŏdĭdĕnīh,
(in) the-morning it-begins-to-dawn, and from-her out we-have-all-disappeared,

ă̆n-nĕ-nă̆-ră̆tĕdĕdĭhtł. Kŏr ĭdŏ nă̆-ră̆lĕyă̆ih. ŏrŏtĕ rałte me-dzŏr-tłă̆kă̆
they-go-hunting. Hares in they-bring. Then too (with) the-breast-sinews

tă̆bīł yĭ-īrŏn ko tenagołon. Tă̆bīł tŏ-nālĕtă̆yĕ sŭŭ ālтłtsĭn; eita
nets she-made this girl. Nets how-many perhaps she-made; these

ă̆ră̆ łŭkă̆ tĕ-tātł'ă̆n. Eit kotormen kūn mor tłi
by-means-of fish she-began-to-catch. That morning again from-her out

no-tsorodidenik. Eit rałte tsikał tłă̆r ronten yŭtŏkŏ
we-have-all-disappeared. Then but an-old-man decrepit suddenly above

lĕtyī lĕdō tse yoko-ran'aih: "Ro-to-netate kūn
in-the-smoke-hole is and calls-her: "And-what-sort-of-a-place also

līdŏtĕn?" yełni. Tse kĕdŏzărătł kāntă̆yĕ yŭyŏkŏ
the-place-where-you-stay?" he-says-to-her. And a-pot-hook a-thing-like down

yĕ tsĕ rŏyī dĕrĕtlĭh. "Kōn kă̆tsĕ tŏ-lĭ'ŏih," yełni.
her toward in-the-hole he-held. "This upon come-up," he-says-to-her.

Kota, yuur rā-dă̆łlĕnār, ko tenagołon, tse eita katse tŏ-lyŏ.
Now, that-place she-was-tired-of that girl, and that upon up-she-went.

Tseyerotse tă̆ kă̆dzŏr ni-yĕnīłtă̆n, tseyerotse rél' nōnă̆nă̆
And-so (under) his armpit he-placed-her, and-so then to-the-other-side

yĕ yĕł nŏ-nŏ-īnă̆ltōk. Tseyerotse yuur ye yeł nōtŏrtł.
her with he-took-his-flight. And-so there her with he-was-flying.

Aruruyeł rél' ko tsikala łĕtyī tā to-rutaten me
And-then this old-man (at) a-smoke-hole thus (gesture) a-place-that-is her

yeł to-no-nālĕdŏ, tseyerotse tă kădzŏr dza no-yeniłtan. "Nŏyŏkŏ
with he-alighted, and-so (from) his armpit out he-took-her-again. "Down

royi nĕ'ōih! Rō-nĕtătsĕ-kūn-mără-tŏ-rūtăuĕn yŭr
in-the-hole go! One-with-whom-what-is-the-matter-now in-some-way

tĕ-tălĕstăn?" yełni. Tseyerotse nŏyĕkă royi réyo. "Rŏ-nōnĕkŏ
have-I-taken?" he-says-to-her. And-so down in-the-hole she-went. "There-landward

yĕkătlōt kŏkŏr tłŏk yi lĕtlŏyĕ, eite tsĕn kŭrŭ'ōn," yełni.
on-the-bench the-fat a-dish in which-is, it from eat-some," he-says-to-her.

Tseyerotse notoko tĕnă-ădĕ-nirŏdălĕnĕn; tseyerotse tsărăł-kĕdĕnĭdĕtłĭts.
And-so up-above we-disappeared; and-so it-becomes-darkness-dark.

Tseyerotse tuur tsărał-kĕdĕnălĕtstĕn ko-no-dādlĕnĭk ĭrŭ. Yĕkātlŏn
And-so there in-the-darkness-dark-place she-groped-about, in-vain. On-the-bench

răzĕni-ru ni-dŏlĕnĭhtł: tłŏk dzăkă ĕitĕ yi ronten nūlăr
the-place-so-called she-laid-her-hand: a-dish narrow this in to-her-surprise salmon

tłĕskă ronte letlo. Inte yĭ'ĭlă: mŏrō tsō-yītłăkă. Tseyerotse
slime unexpectedly there-is. But she-did-not-eat-it: to-her it-was-no-good. And-so

nŏnĕtsĕ ko-ledoten ni-no-ideyo. Tseyerotse eit ledo.
on-the-other-side the-place-where-she-was she-returned to. And-so there she-stays.

Aruruyeł nŏtăkătsĕn łĕtyī rā-nō-kĕdălkŭt: nō-nŏ-dĕtŏ, ĭtłăk.
Then from-above at-the-smoke-hole there-is-noise: he-has-come-back, it-is-heard.

Notoko kăkădlă łetyi rŏtŏkŏ dānĭ'ŏnĕ kăł ni-no-dĕnănītnĕn,
Above the-stump the-smoke-hole on-top-of which-is-across, away he-pushed-back,

ko tsīkălă, tseyerotse ré'lé nōdŏrtsĕ mĕ tsĕ royi nŏ-tsōd'ōts, tse:
that-old-man, and-so then from-above, her to in-the-hole we-came-back, and:

"Rō'ĕ nŏnĕkŏ kŏkŏr tłŏk yi letloye tsĕn kĕrĕn'ŏn-ĕ?" yelni.
"Over-there landward the-fat a-dish in which-is, from did-you-eat-some?" he-says-to-her.

"ō'ŏ, tsīkăł, noneko kokor tłok yi letloye tsĕn kărăsŏn," yełni,
"Yes, old-man, landward the-fat a-dish in which-is, from I-ate-some," she-says-to-him,

zī-ăłōŏt, nŏr zī mĕ tsĕn kēi'ĭlă, inten. Tseyerotse yur
untruthfully, for merely it from she-ate-not-some, even-though. And-so thus

tłĕtĕ rorélet. Tsō-rūtłăkătsĕ rŏkă ye tse tĕ-tăn, iru; yŏr kăł
the-night passed. Evil-things wishing her to he-goes, in-vain; from-him away

ni-nă-ălĕrăihtł ko tenagołon. Yor tłĕtĕ rélnĭk, īrŭ. Tse eit
she-escapes-often the girl. About-her the-night he-spent, in-vain. And that

kotormen yetatłkon eit, tseyerotse rél'é nonetsen no-tsorodiłkon.
morning it-began-to-dawn there, and-so then on-the-other-side we-made-a-fire.

Ko kĕtłĕskă kŭn kătsĕn ko-ĭłtlăk; eite rél'é rūzŭntsĕ mĕ-tłă-ă-nŏ-ĭnīhtłă:
That slime the-fire upon he-drags; this then well it-is-not-cooked:

yĕrŏtsĕ yerĕłtŭt. "Akĕ!" yŭdĕnī ko tenagołon, yĕnīł'ăn
thus he-sucks-it. "Dirty-thing!" thinks-of-him the girl, she-looks-at-him

toruno. ătłĕyĕ-łō mātskōk-tĕn'ă kō te-tanen. Tseyerotse keré'on
whilst. And-it-was a-large-gull-man the one-doing-so. And-so he-had-eaten

to-rotłoron, łetyi kun ro na-radeyo. Yetoruno ko kăkăđlă
after-that, (through) the smoke-hole again out he-went-back. Meanwhile the stump

rŏtŏkŏ dani'one, eite rałte me tŏkŏ nŏ-tsĕdŏ'ŏih ăt̆ĕ-kŏtŏrmĕntŏr.
on-top which-is-set-across, this also her on-top-of we-put-back every-morning.

Tseyerotse yar ledo, ăt̆ĕ-dzān-tŏr: rŏră-ro-nŏ-rŭdĕyŏ
And-so in-the-house she-stays, every-day: the-way-that-she-may-go-out

tsă-răđĕn. Yur rŏlŏntĕ dzan eit dzan rélet. Tse yur dzan, notoko
there-is-not. Some many days there the-day she-passed. And a-certain day, above

łetyi rotsen rā-kĕdăđlĕkŭt, itłak. Aruruyeł ko kakadla rotoko
the-smoke-hole from there-is-a-noise, it-is-heard. Then the stump on-top

dani'one tăt̆sĕ tĕ-dĕyŏr tān, tse yŭnłŭră tō-nĭdzĕt tō-dŏlĕnĕn.
set-across thus (gesture) became, you-see, and far-away in-mid-water it-fell-in-the-water.

Tseyerotse rél'é ko notaka łetyi ronił'an: yutoko ronten kél
And-so then this above smoke-hole she-looks: above unexpectedly a-youth

zŭŭ mĕnīł'ăn. Eiten rél'é ko kakadla ta kă ăr̆ă kăł ni-no-dĕnănīłtŏrtł.
nice looks-at-her. This-one the stump his foot with away has-sent-flying.

Tseyerotse: "Tŏ-īntăt̆ĕ kŏ kūn līdŏtĕn? Yar ruzunte
And-so: "What-is-the-matter-with-you here also that-you-stay? A-house nice

ło-'é kun lidoten?" "Kota, ra-dalesenartse antakon." Tseyerotse
is-it also where-you-stay?" "Enough, I-am-disgusted-of-it it-is-thus." And-so

nōdŏrtsĕn ye tse royi kederétlih, tseyerotse rél'é nŏtăkă
from-above her toward in-the-hole he-stretched-a-stick, and-so then up-above

łetyi ro yĕrełtăn. Tseyerotse rél'é ta kadzor
(by) the-smoke-hole out he-brought-her. And-so then (under) his armpit

ni-no-yenił tan. Atłeyé-ło ko kun tĕlĕł-tĕn'ă. Tseyerotse nonana kun
he-put-her-again. And-it-was this other-one an-eagle-man. And-so across again

ye yeł no-no-inaltok. Tseyerotse tās lŏră tŏnĕ'ă tū
her with he-took-his-flight. And-so a-sand-bar along upstream the-water

ā-łăr̆ă-tsĕdĕtlŭk, nīłkăatsĕ tă tĕ-tān, tse-rora nūlăr
we-flap-with-tip-of-the-wings, on-both-sides thus (gesture) he-does, by-which salmon

te-ł'an ko tsikala, ko matskok-tĕn'ă. Eit rél'-ko yenerél'an-ĕ ko
he-catches the old-man, the big-gull-man. There then she-saw-him this

tenagołon. Tseyerotse ko tĕlĕł-tĕn'ă no-notortł. Kayar kun rŭdlĕkăttĕ ye
girl. And-so this eagle-man across-is-flying. A-village also a-large-place her

yeł no-notok, tse łetyi kun no-nerédo. Eit rałte ko ta
with he-flew-to, and (at) a-smoke-hole too he-alighted. There also (from) the his

kadzor dza no-yenił tan. Aruruyeł teken lora rałte răn̆ŏł tŏ-dăl̆ĕtlo,
armpit out he-took-her. And-then the-sticks along but deer-skins are-hanging,

tsō yeł nīł rŏtăkă tŏ-kĕdlĕyō, zī tĕnă-kălă ĭntĕn ko
caches also each-other above are-put-up, merely there-is-nobody, even so this

teleł-ten'a kĕłŏkĕn yān ko kayar ledo, eiten mĕyūlnĭken. Tseyerotse:
eagle-man one only (in) this village stays, the-one who-has-taken-her And-so:

"Noyéka royi ne'oih," mizeni. Tseyerotse royi réyo.
"Down in-the-hole go," we-say-to-her. And-so in-the-hole she-went.

Tseyerotse: "Ro'é nŏ'ŏ yur nĕlăn yar letloye, eite tsen
And-so: "You-see over-there some meat in-the-house which-is, that from

kuru'on," yełni. Nĕlăn zuu ko yar letlo, tse eite tsen keré'on,
eat-some," he-says-to-her. Meat fine in (this) house is, and it from she-ate-some,

kĕtłă-kăt. Notoko rałte tena-ade-ni-rodalenen. Tseyerotse yar ronił'an:
being-hungry. Above however we-disappeared. And-so the-house she-looks:

yar ruzun, yur ken tetłeke eit letlo. Răn̆ŏy nĕlăn zuu letlo: eite
the-house is-nice, some thing all there is. Deer meat nice there-is: it

tsen keré'on. Răn̆ŏy tłăkă yeł yar keletlo: yur eite yeł
from she-ate-some. Deer sinew also (in) the-house there-is: some (of) it with

yur tăbił yeł, yur tāak yeł, yur kăkĕn yeł, ken tĕtłĕkĕ yī-ītālrŏn.
some nets also, some parkies also, some shoes also, thing every she-began-to-make.

Răn̆ŏy kātsĭh yĕł kĕītālrŏn. Tseyerotse yen-yiroihe tłi
Deer pants also she-began-to-make. And-so the-things-which-she-makes out

no-leyaih, tsō bără rałte ta-alaih. Tseyerotse ko-tałlenik.
she-takes, (at) the-cache's edge also she-put-them. And-so she-has-begun-to-work.

Tseyerotse kota eit royan ko-taldo'é. Ko kéla mo-kŭn
And-so now there only she-has-begun-to-stay. That youth her-husband

a-ltlat; eiten tsĕn neñkoroten'a lonna atłtsin; mĕ-tĕn'ăkă rultlat.
became; him from people many she-made; her-children there-began-to-be.

Yakanyoza na-ałtaih. Tse yur rolonte eit nŏ-rŏdătłlĕt. Tse
Babies she-brings-forth. And some many-times there she-passed-the-year. And

yet yŭr sān rélet, tse roĭhtsĕn rŏtālkŏtł. Yur tłi
there a-certain summer she-passed, and in-the-fall it-began-to-freeze. Once out

niyo aru, ăn-rŭ ni-niyo tse rél' rétsar, tă kăyăr
she-went near-by, a-lone-place she-went-to and then she-wept, her village

ror-tādlĕkărtĕn, eit rŏkăt. Tseyerotse yido no-ideyo,
from-which-she-ran-away that-place wishing-for. And-so in she-went-again,

toruno me-ten'aka yeł mo-kŭn yeł yar dădlĕtłĕ: yar tĕn'ă
while her-children also her-husband also in-the-house stay: in-the-house people

lon. Tse to-kŭn kala ni-no-ideyo, tse: "Ro to-netaye
many. And her-husband at-the-side-of she-went-back, and: "Oh! what-is-this

kŏtnī-tū se kŏkă no-nĕ-tāltlĭn?" ko mo-kŭn ni. "Tłi nĭnyŏtĕ
tear-water me upon down-has-dropped?" the her-husband says. "Out when-you-went

tŏ-dĕrénnī?" "Nĕdăn, to-dĕsnīlă"; yełni. "Tłi ninyote
what-did-you-say?" "No, I-said-nothing"; she-says-to-him. "Out when-you-went

réntsar-é? to-derénni?" Tse yur tłetał rél'é mo-kün
did-you-weep? what-did-you-say?" And some-time during-night then her-husband

yŭdĕłkăt: "Rō'é dzan tłi ninyote réntsar-é?" yełni.
questions-her: "You-know to-day out when-you-went did-you-weep?" he-says-to-her.

"O'ŏ, dzan tłi nes'ote răstsăr: ro'é sa kayar ror-tāléskártĕn,
"Yes, to-day out when-I-went I-wept: you-know, my village whence-I-ran-away,

ēit rŏkăt," ni, tse to-kŭn nŏrŏł rŏléněk. "Kŭllă!
that-place wishing-for," she-says, and her-husband before she-declares. "Poor-thing!

to-dinitsen! Nětăkūn kětětĭ na kayar rŏkă tĕ-ĭntā; dzāl,
what-say-you! Do-not too-much your village wishing-for be; never-mind

ko ĭsĭ ruzuntse ăntă-kŏ kun lido," yełni. Tseyerotse kun
here-indeed well it-is-that also you-stay," he-says-to-her. And-so again

na-radetsar ko tłetał. Tseyerotse tsūkăł a-taltlat. "Kota
she-wept-anew that night. And-so an-old-woman she-began-to-become. "Now

rél' yurru sōdĕł," răyīnīdăk, tetłektsen, ko mo-kŭn yeł. Tseyerotse
then there we-shall-go," they-think, all-of-them, the her-husband also. And-so

rŏtł kătsĕ to-rurultlo: rŏtł rabe te rănălĕtā, ko me-ten'aka,
sleds upon they-put-things: sleds them to are-equal-in-number, those her-children,

tse eite yeł rătāldătł. Ko mo-kŭn rałte kŭn-kăstł kāntăyĕ
and them with they-started. That her-husband then a-poker a-thing-like

kŏ-dătīh. Roĭhtŏr rŏlŏră kŏrŏdĕł, tse ko kŭn-kăstł kantaye ko
he-carries. The-winter entire they-keep-going, and that poker thing-like the

mo-kŭn ko-yĕdātĭhĕ, eite rél'é ko-ni-ră̆năih tor, rŏrŏdĭłkōih
her-husband which-he-carries, that then they-stop-to-camp when, they-make-fire

tor, kŭn ără roni ĭdĕtīh, tătsĕtsĕ rałte dĭtĕněrăs.
when, the-fire near-by in-the-ground is-planted, to-this-side then it-falls.

ŏrŏtsĕ-rora rél'é kŏrŏdĕł: tĕkĕn rōt tłi-rādĭhtł, ode
By-this-means then they-go-along: the-stick according-to out-they-start, the-whole

dzan karadihtl. Kŭn ără ni-idetlih tso-royan. Tse yur rałtsen
day, they-go-on. The-fire near-to it-is-planted always. And a-certain evening

kūn ni-ratalno, aruruyeł rél'é tłĕtĕ rarédak. Kotormen
again they-stopped-to-camp, and-that-time then the-night they-spent. In-the-morning

kun roni no-yederétlih, inte ronten dĭtĕnĕłrăză. Tseyerotse
again in-the-ground he-planted-it, but unexpectedly it-does-not-fall. And-so

nă-rădădlĕyō. Aruruyeł kotormen yōłkŏł, aruruyeł nĕdătŏr
they-stood-still. And-then in-the-morning it-dawns, whereupon somewhere

rŏtsĕn kĕlĕkă a-ne-zĕlĭ, itłak. Tseyerotse rél'é kota sŏ-dĕtădlĕtsĭh.
from songs we-sing, it-is-heard. And-so then at-last she-began-to-rejoice.

Tseyerotse yur băabă ko rayołrole tetłeke rŏrŏdī'ōn
And-so some food the which-they-carried all they-have-eaten

kă-tă-rădĕyŏr. Tseyerotse yūnŏtsĕ-yūdŏt dza ranidatł, aruruyeł
they-have-become-as. And-so across-downstream out they-came, when

yŭnĕtsĕ-yūnĭt ronten, tena kā ronten, neñkoroten'a
opposite-upstream unexpectedly, us (=some one) mourning-for then, people

săkăihă yeł sū-dĕlĕ'ŏł. Eit rŏnŏrtsĕnă nūtsĭł gĕtă ronte
children with play. That-place behind an-enclosure large unexpected

tŏ-dlēkăt. Tseyerotse dza ranidatł, tse tĕn ka noko rădĭdătł,
there-is. And-so out they-came, and trail at-the-end-of on-the-beach they-came,

tseyerotse ko me-ten'aka yeł sū'ōl ta-ratan. Atleyé-łe ko soltan ko
and-so the her-children with games they-make. And-it-was that woman the

kayar-ror tădlĕkărĕn, eiten kăt nūtsĭł ta-ratan. Ko tlărŭ
from-the-village one-who-ran-away her mourning-for the-feast they-have. The at-first

mor-yĕrĕdŏ'ōn ŏrŏdŏnă nāltān. Nĭłlōrū yet rădĭrălĕtłĕ,
one-who-lived-with-her a-long-time-ago went-to-sleep. A-long-time there they-stayed,

tse ră̆tĕ kŏnōn rŏtsĕ na-ratałledatł. Tse ăt̆ĕ-ŏrŏt̆ŏr, ăt̆ĕ-nŏ-rŏdĕlĕktsĕn
and their house toward they-started-back. And every-year, every-year,

yet ne-na-radedihtł. Tse yur yet ne-na-radedihtł, tse na-ratałledatł
there they-return. And once there they-return, and they-started-back

ruyeł ko soltan yur tsukala kéłoken ta-ałni: "Tsukał, yăkă
when, this woman a-certain old-woman one she-says-to: "Old-woman, behold

tuur-ăt̆ŏkŏt ĭsī kŏt̆ă, ko-yĭni-săłlĕdăk, kă-to-ruta, tse tuur-săntă
at-this-time indeed the-end, we-have-begun-to-reflect we-are-like, and next-summer
(we-are-troubled-in-mind)

kota ronten kăkā a-ne-tseltlat tă, an tă, yăkă ŏrtă ronten tĕnă
finally perhaps animals we-have-become if, thus if, behold next-year perhaps us

ădĕ rŏihtŏr rŏtŏlĕt, kon nĕ-nŏ-tsĕłlĕdălă toruno. Kota, ronten
without winter shall-pass, here we-do-not-return while. That-is-all, perhaps

kăkā a-ne-tseltlat ta." Tseyerotse tsukał rŏ ni-do-kedani'on.
animals we-have-become if." And-so the-old-woman to she-left-word.

Eit rotsen rŏlŭkŏtŏrŏt na-ratałledatł, tseyerotse sān rorélet,
There from in-the-spring they-started-back, and-so summer passed,

tse roĭhtsĕn rūlkŏtł, tse răbăděn roihtor rorélet.
and in-the-fall it-froze, and without-them the-winter passed.

"Kota, kăkā ă-nĕ-rāltlăt," răbĕizĕnī. Kota, rŏih rōn
"That-is-all, animals they-have-become," we-say-of-them. That-is-all, winter a-part-of

nālĕtłkŭs.
I-have-chewed.

The Man-Eagle.

That small bird which lives on the beach and which we call *tokoroldala*, was at first the husband of a very beautiful woman. He lived with her one summer, but when the river froze he gave all his thoughts to another nice-looking woman, who had been his wife for a time. Seeing this, his wife left him and ran away. She went down the river and crossed it, and kept walking. Whilst climbing up the lower bank, it is said that she called the wind. And it began to blow, in the clear spaces between the trees, and she was walking with the wind. Going on

she reached a lake, which she crossed from bank to bank, and she continued to walk along the shore. There she found an old underground house, which she entered, and dark as it was in there she began to feel around on the floor hoping to find some one, but she could find nobody. Then again she felt with her hands on the bunk-shelf, in the dark. And suddenly she laid her hand on something that felt as though wet and soft, and she heard someone, scared by her action and muttering: "Hum! hum! hum." She was afraid, and ran away. She kept on, running the whole day. When evening came and the sun had set, she came to a place where there was good, dry wood, and she built herself a fire. And, as she sat by it, she heard someone coming, following on her tracks. It was an old man, the one who lived in that house by the lake, where she had stopped. Coming near, he sneezed and said: "Good omen! this means that I am not far from that which I am pursuing." And she was very much afraid. At her door, that is, at the place where she was going in and out—for she had camped in the snow—someone had stopped. She looked in that direction, and oh! a hideous-looking old man was there standing at the entrance and looking at her. "Fix a nice place for me by your side," said he. "How can I, old man?" she replied, on both sides of me there are sticks," she said, deceiving him. "Well," said he, "further to the inland behind you." "Oh! how could I, old man? Behind me also there are sticks," she said, deceiving him again. "Well then, opposite, in front of you." And on the opposite side from the fire, in front of her, she prepared a good place for the old man. And he sat himself in that place. It was getting late, and she was so sleepy that she began to nod, through drowsiness. So they both slept awhile. But she heard him getting up, on the opposite side. Then she herself jumped up and rubbing two sticks against each other, she started a fire, for she was in great fright. The rest of the night she kept the fire going, and thus she did not sleep. And at daybreak she put on her clothes. Then, addressing the old man, she said: "Old man, your rags are all torn; how is that?" Then he handed her his clothes, saying: "Mend them for me; I do not know what tearing you mean?" And she just thrust into them a burning ember from the fire, and placing them behind her back, let them burn up. Then she said: "Old man, your parkie also is torn: how did that happen?" And he handed his parkie to her, which she also burnt. In the same way she burnt his whole footwear. The old man stood, all naked, warming himself by the fire and turning his back to the girl, so that he could not see her. At that moment the wind began to blow, and the old man said: "I smell burning clothes; what has happened, that it smells of burning clothes?" "Nothing, old man," said she; "it is only my parkie that has been touched by the fire; it has been singed, and it gives that smell." But, in truth, she had burnt up all his clothes. So she said: "Old man, wait a moment till I go and get some more wood," thus again deceiving him. And, as she was already dressed, she went, unseen by the old man, and quickly taking her sled, off she went, running as fast as she could. She had a great fear of the old man, and so she kept running the whole day. Thus she came to another lake, in which the

long marsh-grass had grown in large clusters, still standing. Taking care not to step on these bunches, she walked between them, at the same time brushing the tops of the long grass with a small stick that she carried. This she did to call the wind, and it proved successful. The wind began to blow, drifting along the snow (and thus covering her tracks). So she felt safe to cross to the other side, and there, in a clearing, she lay down to sleep. Before going to sleep she spied the old man who was pursuing her, as he came out from the woods, on the opposite bank. He had no clothes on, and, naked as he was, he kept running on, from time to time watering on his feet, to keep them warm. (When he came to the opposite bank he saw no more the girl's tracks, which were drifted over, and) she could hear him exclaim: "Have I got her now?" But she was lying down on the other side of the lake; and she planted a stick in the snow, to which she hung a string of deer's hoofs, and the wind, shaking these hoofs, made them sound as a bell, during the whole night.

In the morning, when it dawned, she came out from her camping place, and in the sunshine she started back to see what had happened on the other side, at the place where she had stopped before crossing. She did not reach it, however, for when she was about mid-way to it she saw the old man lying down in the snow, frozen by the cold wind.[1]

From that camp she made for the hills, and crossing them reached the sea-shore, and came to a village.

The next morning, at the first dawn of day, all the inhabitants went off on the hunt. This was their daily occupation. They came back loaded with rabbits, and with the sinews of these she made nets. She made a great many nets, and used them to catch fish. (But she was lonesome, and disliked to be left alone the whole day.) And one morning they had all left her, as usual, when suddenly she saw an old man standing at the smoke-hole and calling her. "How did you come here?" said he. And taking one of the wooden hooks used to hang kettles over the fire, he let it down through the hole, saying: "Get up on this." She was disgusted with the place, and she readily complied. When she had climbed on top, he placed her under his armpit and took his flight. He carried her in this way, flying about, till he came to a smoke-hole, on the side of which he alighted. He then took her out from under his armpit, saying: "Get down in this hole, and let us see what sort of a person I have got." And she went down. "Find the piece of fat that is in a dish on the shelf, to the landward, and eat something," said he; and immediately he disappeared. It was very dark: she groped about, finding nothing at first. Then she came to the shelf: on it a narrow dish was placed, but it contained only the slimy mucus that covers the body of the salmon. She did not eat any of it: she felt no desire of it, but only repugnance for it. She then went back to the place where she had been sitting first, and remained there.

[1] Here and in the literal translation, a couple of lines have been left untranslated, as they are somewhat indelicate. The Alaskan has not been interfered with.

Soon enough she heard a noise at the chimney-hole; it was the old man coming back. He pushed aside the big stump with which he had secured the smoke-hole, and came down through the hole. "Well," he said to her, "did you eat of the fat which is in that dish?" "Yes, old man, I did," she replied; but she was deceiving him, for she had not eaten any. Then the night passed. He came to her with lewd proposals, but she got away from him. Many times did he repeat his attempts, but she foiled them. He spent the night in useless efforts. In the morning, at daybreak, he made a fire, and, taking the salmon slime, he dragged it over the hot coals and ate it: it was not half-cooked. "The dirty (nasty) thing," she thought. It was a large-gull-man.

After he had eaten, he went out again through the smoke-hole, closing this very carefully, every morning, with a big stump. And, not being able to leave the place, there she stayed, day after day. Quite a good many days, indeed, did she spend there, until one day she heard some noise over on the smoke-hole, and the stump that closed it was violently cast aside, and thrown far away in the water. She looked up, and was surprised at seeing a nice-looking young man, who was gazing on her. He it was who had kicked away the stump, and sent it, flying, to a distance. He said to her: "How comes it that you are in this place? Is this a nice house for you to live in?" "Oh," she answered, "I am thoroughly disgusted with it." Then he put down a stick for her to climb up, and he took her out, and placed her under his armpit. This time it was an eagle-man who was taking her. He took his flight, carrying her, across the water, and whilst they were crossing she caught her last view of the old man, the large-gull-man: he was flapping his wings on the water and catching salmon, at the edge of a sand-bar. But the eagle-man was flying along, and came to a large village; there he also alighted at a smoke-hole, where he took her out from under his armpit. Deer-skins were hanging around, stretched on sticks; caches were piled one above the other; but there was nobody, no one lived there but the man-eagle who had taken her.

"Go down in the hole," he said. And she did. Then again he said: "There is meat there, in the house; take some and eat." It was indeed fine meat, and she ate, for she was very hungry. Then she examined the place, and found it good, filled with good things. There was the deer-meat, on which she had feasted; there was also some deer-sinew, with which she began right away to make nets, and parkies, and shoes, and all sorts of things. She made also deer-skin pants. The articles which she made, she took out, and stored them on the front part of the cache. She set to work for good, and made up her mind to remain in the place. The young man took her to wife, and from him she had many children; the place teemed with them after some years.

One year, when summer was over and the first frosts had come, she went out of the house, and retired to a lonely spot, and there she wept, thinking of her native village, whence she had run away. And when she returned to the house, where her husband was, and which was filled with her children, she sat by her

husband's side. "Oh!" he exclaimed, "what is this? a tear has dropped on me!" And, looking at his wife: "What have you been doing out there? Have you been crying?" But she said: "No, no such thing." And he was repeating his questions: "Out there, have you been crying? What did you do?"

And during the night he asked her again: "When you went out to-day, did you cry?" "Yes," she said, "to-day I went out and cried; I was thinking of my native place whence I have run away: I wish I could see it again." So she told all to her husband. "Alas!" he said, "what do you tell me? Do not be longing for your native place; are you not in a good place now?" But she only wept again, that very night. And from that time she began to grow old.

"Well," they thought, "we shall have to go there." Her husband also made up his mind to go. They loaded their sleds, each of the children having one, and they started. Her husband carried a long stick. It was a long journey, that lasted the whole winter. When they made camp, the stick which her husband carried, was planted in the snow, by the fire side, and the direction in which it leaned was the one they followed the next day: the stick was guiding them, and where it pointed, there they went. Always they planted it near the fire.

But one morning, after they had camped for the night as usual, and set the stick up as they always did, it happened that the stick stood up: it did not lean towards any point. They waited, and when the daylight was come they heard voices singing. The woman then began to rejoice. It was time that they should arrive, for their supply of food was almost exhausted, and they came out from the woods to the river, on the other side from the place where the singing was heard, and below it. And then they could see that at that place, across and above them, a mourning celebration was being held. People and children were engaged in games, and further inland a large "nutsił" had been erected. They came, and when they were at the end of the trail, her children joined in the games. And what should be the celebration, but the mourning-feast for this very woman who had run away from the place! Her former husband had been dead some years.

They stopped there for a good long while, and afterwards returned to their own house. But every year they made a visit to this village. On one of these visits, as they were ready to start back, the woman said to one of the old women: "Old woman, these last weeks we have been troubled in our thoughts, something will happen to us. If we should not come back next winter, if the winter passes without you seeing us, you shall know that we have been transformed into animals." And having imparted this intelligence to the old woman, they left. It was spring-time. The summer passed, the fall and its frosts likewise, and the winter passed also, without their coming to the village. "This time they have been permanently changed into beasts," was the saying there.

That is all; I have chewed off a part of the winter.

NOTES.

"Tĕlĕł-tĕn'ă"—literally the eagle- ("tĕlĕł") man ("tĕn'ă"). The wonderful beings of the Ten'a lore are generally animals that can assume the human form, or conversely. The story generally ends, as this one does, by their final reversion to the animal, sometimes to the human shape.

"yūtłur," see note on "yūtlīt" after the story of the Raven (p. 305). "Yutlur" is more undetermined than "yūtlīt," equivalent to "somewhere riverward." The use of this demonstrative here can only be accounted for by the fact that the narrator, when telling the story, was at a good distance from the beach, and there were, presumably, woodpeckers in the intervening space. It was during summer.

"sānkăkā," lit. a summer beast ("sān," summer, "kăkā," beast), a name applied to all the small birds that leave the country during winter.

"tŏkŏrŏldălă," more commonly "tĕkĕltłăla," a species of tufted woodpecker.

"tłărŭ mŏr yĕrĕdŏ'ōn," with whom he had first cohabited. The marriage-tie, among the Ten'a, was easily broken, and became permanent, only after children were born. But this generally made it stable, and it was a rare thing for a man to dismiss a wife who had borne him children, as it was common to repudiate one who had not.

"tłŏtnă," the south bank of the Yukon is a plain, covered with forests, lakes and marshes, and is designated as "tłŏtnă"; whilst the north bank is hilly and rugged, and termed "tłăkĕnă."

"nărălŭ-kŏnōn," lit. a winter house; the underground house described in the notes to the story of the Raven.

"kō nŏ-dădlĕbĕdzĕ," a bunk-shelf, seldom found in Ten'a dwellings, but common in the Eskimo houses of the sea-coast. It runs along three sides of the house but not on the entrance side, is generally four feet above the ground, and a little over two feet wide. Eskimos use it to sleep upon. It may have existed among the Ten'a who had intercourse with Eskimo tribes.

"kĕdŏ tsĕdĕtădlĕrăł," we were frightened, *i.e.*, some one was frightened. The first person plural is constantly used as an indefinite subject or object, and this indefinite is often used in place of the third person singular. This will occur more than once in this and other narratives.

"yĕł'ŏsk," he sneezes—sneezing is always an omen, and the one who sneezes, or a bystander, then addresses the occult agent that has caused the sneezing, formulating a wish, but in the shape of a prediction, as here: you foretell (*i.e.*, may you foretell) the thing I am running after.

"īnădlĕkĕt," with a drawl on the last vowel, very emphatic.

"kŏ zī ăłŏŏt," untruthfully; this meaning is evident more from the context than from the words themselves, which properly mean: without a reason.

"tĕkĕn nīł tsĕ nŏ-dĕtĕłdīhtł," she rubs sticks against each other. The Ten'a apparatus consisted of a mouth-piece, of stone or bone, with a cavity to hold one end of a pencil-like stick, the other end being inserted in a similar cavity in a piece of dry wood, a string of rawhide going around the stick and tied at both ends to a bow; when this was moved imparted a rapid rotation to the stick. The first result was the production of very fine wood-dust, which accumulated in a notch managed on one side of the hole. This was easily inflammable, and soon caught fire from the heat developed by the friction.

"sŏrō nō-rēkōr," mend them for me. It is still a practice of Ten'a hospitality to mend the boots and clothes of travellers who stop in the cabin. By remarking that his clothes were torn she was offering her services, and he naturally accepts them. The dialogue is typical of everyday occurrences in Ten'a life.

"kăkĕl, kăkĕlă," more commonly "kĕkĕl, kĕkĕlă," clothes.

"kĕtsān," grass of any kind. She avoids stepping on it, but walks only "kararataka," or as the Ten'a render it: "in the betweens," so as to leave no trace of her passage, for the wind is filling up her tracks with drifted snow.

"nōnăn," though properly meaning across the sea, is used whenever the expanse of water alluded to is very broad.

"rănŏy-kălĕkŭnă," deer-hoofs. Whether there was any magic power attributed to these primitive bells, I could not ascertain.

"tărăyŭk," salt; seems a foreign word, perhaps borrowed from the Eskimo.

"kŏr," hare or rabbit, common all over Alaska.

"lĕtyī," the smoke-hole or chimney. See the notes on the story of the Raven (p. 308).



"kĕdŏzārătł," a stick with a branch protruding at both ends, used to hang kettles over the fire; the upper hook catches on one of the roof-sticks, and the kettle hangs on the lower hook.

"yĕkătlōt," on the bench or bench-like elevation around the fire-place. See notes on the Raven (p. 308). The fire-place is lower than the surrounding part of the floor-ground, by a foot or more. This elevated platform, and more especially the part of it opposite the entrance, where the master of the house and his family have their beds, is known as "yĕkătlōt" or "yĕkātlŏnă."

"tłōk dzăkă," narrow, might mean also: dirty. The "batskok-ten'a" is described as a person of unattractive habits.

"nūlăr tłĕskă," salmon-slime, "tłĕskă," when used absolutely: "kĕtłĕskă," is the mucus which always coats the skin of the fish. The gull-man eats it, and calls it "the fat."

"mātskōk-tĕn'a." The "mātskōk" or "bātskōk" is larger than the "māts" or "bāts," the common white gull, and is of a brownish colour.

"tâtsĕ tĕ-dĕyŏr," the gesture shows the stump suddenly thrown away.

"tsō," the cache, in its simplest form, is a platform on four sticks; it stands some 5 or 8 feet above the ground, and serves as a store for provisions, which are there safe from the voracity of the dogs and the incursions of the mice. The term "tsō," however, properly applied to a roofed cache, built on four piles, in shape of a small house, the simple platform being called "tŏrtsĕł." Here, the context would indicate that "tsō" is used for "tŏrtsĕł," which is not unusual.

"rănŏy-kātsĭh," deer-skin pants, were formerly used by both sexes, the shape of the upper garment, or parkie, only distinguishing them. The man's parkie is cut straight at the bottom; that of the women is rounded in front and behind, somewhat after the fashion of a chasuble.

"kŏtnı tū," tear-water. The term "kōtnī" seems to have reference to some magic power, either possessed by the tears, or which causes them to flow.

"kŭn-kăstł," lit. a fire-stick, a stick of hardwood used as a poker, generally long and slender.

"dĭtĕnĕłrăzā," the stick not pointing to any direction, they are apprised thereby that they are at their journey's end.

"yūnŏtsĕ-yūdŏt," across-below, or, equivalently, south-west. The speaker here locates the place where they "come out" to the river with reference to the situation of the village; the verb "dzā-rănīdātł," they came out, is used with reference to the river and woods only.

"yŭnĕtsĕ-yūnĭt," opposite-above, or, equivalently, north-east. Now the village is located in regard to the travellers. The use of "nĕtsĕ," opposite, for "nŏtsĕ," across, as seen in this instance, is rare.

"tĕnă kā," lit. us-wishing-for, desiring us; *i.e.*, desiring or rather mourning for some one, as yet undetermined. They arrive in the midst of a mourning feast, and, consequently, shortly after mid-winter (our Christmas or New Year's Day), this being the time at which these celebrations are held. The preposition "kā" denotes simple desire or wish, as well as regret or mourning: the exact meaning is determined by the context and circumstances.

"nĕūkŏrŏtĕn'ă săkăihă yĕł sŭ-dĕlĕ'ŏł," people and children are having games, as is customary on such occasions, viz., races, wrestling contests, etc.

"nūtsĭł," an enclosure of poles, some 8 or 10 feet high, generally in the form of a square, of about 20 feet on the sides, erected expressly for the mourning feasts, among the Ten'a of the upper tribe. Twice a day, in the morning and evening, a fire is made within the enclosure, and food cooked over it for the whole village. This is distributed on the spot, each one coming with a plate or dish to receive his portion. The devout ones throw a bit from this portion into the fire, to benefit the soul of the person for whom the feast is being celebrated.

"nāltăn," went to sleep. The phrase is often used to mean death.

"kō-yĭnī-sătlĕdăk," we have begun to be troubled in our thoughts, we feel uneasy or restless. This is given as a sign of their impending transformation into animals.

This story was obtained from Andrew Keniyo, a native of Tsenoketlarten, on the Koyukuk River. He also supplied the explanations of the doubtful points.

Ses-leł.

The-Bear-Skin.

Nił-kŭnka raledo, rabe-ten'aka kun notĕrna. Ranōya lōn
A-married-couple stay, their-children also two. Deer many

te-ł'an ei mo-kŭn, tse yurru radadletłé, san roĭh tor
he-catches the her-husband, and there they-stay summer winter during

royeł. Ronten mo-kŭn aba tāltlă. Niłlōru aba nelan,
also. Suddenly her-husband sick began-to-be. A-long-time sick he-is,

tsarałte ketetī ta-ranił. Ronten to-'ot ta-ałni: "Yăkăt
and very-much he-becomes. Suddenly his-wife he-says-to: "Then

to-lestlon-ta, yutłit se midoo yit no-surūłtał, tse so kō
when-I-shall-be-dead, on-the-beach my canoe in put-me-up, and my bow

kūn, se diloya kūn se yeł taka to-rūlał." Tse yet-rotłoron
also, my things also me with up put-up." And there-after

niłkŭdzătse rotāltlette to-ltlon, tse yerotse te-yilor, te-meyederénitsen;
a-short-time was-passed-when he-died, and thus she-did-to-him as-he-had-said-to-her;

tsarałte atsăr tso-royan. Roihtor rorélet, rolūkot kun. Kélte
and she-cries all-the-time. Winter has-passed, spring also. One

kōdormendōna tłi niyo, tsarałte kun no-tałletsar. Ronten yutoko
early-morning out she-went, and again she-began-to-cry. Suddenly up-above

sānkāka to-naledo. "Ran'aih kāt," ni, "iru"; tsarałte
a-summer-bird is-perched. "Speak wishing-to," she-says, "perhaps"; and

yutelatłtłon. Ronten te-deni: "No-kŭn yu'utsena nīł-rŏnĕkă
she-began-to-listen-to-him. Suddenly he-says: "Your-husband over-there a-pair-of-wives

ro datłtłé." "Ken-é? ken-é?" yedetālni; "netūra, se
near (him) keeps." "What-is-it? what-is-it?" she-began-to-say-to-him; "quick, me

noroł te-dini, neldĕla ne tse itenaraslał." Aruruyeł rołitse ye noroł
before say-it, a-necklace you to I-will-give." Then minutely her before

rolenek. Tse yu'ut ye midōya ro ni-niyo: ye yi runatł'an, tse me yi
he-declared. And there his canoe to she-went: it in she-began-to-took, and it in

kăkălă. Tse yet-rotłōron neldĕla ye tlo nerélo. Kota atsartse
nothing. And there-after a-necklace him to she-gave. Now-then her-crying

ra-do-derénik. Ronten ses-leł no-no-dōlekūł, tse no-yedetatłtsĕł, tse
she-ceased. Then a-bear-skin she-took-down, and she-soaked-it, and

yetaltlŭr, tse nekŏrtse te-yilor, tse ada-yurādlenīk. Inten
she-scraped-it, and being-big she-made-it, and she-wrapped-herself-in-it. But

me yālŏr rūkŭdza, tse yet lokŏle ra-no-atłkot. Tse baaba
its under-chin is-small, and there a-white-(piece) she-put-as-a-patch. And food

lon te-ten'aka ōrō te-tatł'an; tetłĕktsen yar yido-yenilo,
abundant her-children for she-began-to-get; all in-the-house she-brought-it-in,

tse notérke tekĕn nił-tsa-łar-a-dōlekăze derełzuk. Eit rałte to-rołni:
and two sticks forked she-took. Then also she-said-to-them:

"Yur nedatse to-rudeyor tă, mara tu-urtan: kon royān dalorletłé."
"Some how it-happened if, with-them act: here only stay."
(If anything should happen)

Tse tłi no-ideyo, tse ne-no-yedōlekuł. Eit rałte ses a-łtlāt,
And out she-went-back, and she-put-it-on-again. There then a-bear she-became,

tse talyo; netur talyo, nił-loru ni-ko'oł. Ronten dłeł gĕtă ro
and started; quick she-started, far-away she-was-going. Then a-mountain big to

niyo, lo'oń tūska rulanten ni-niyo, tse ta kal notérké
she-came, stones flat where-there-are she-stopped, and (on) her sides two (stones)

nił-kootsen ni-nilo, ta kāda kătsĕn kun, me tootsen kun, tse kun
(one) on-each-side she-placed, her forehead upon also, her back also, and again

no-tałleyo. Ronten dłeł geta katsen ro-no-łleyo. Aruruyeł ronten
she-started-again. Then the-mountain big upon she-went-up. And-then

sărnŏ roka réyo, yutłura roka réyo: yurru ronił'antse
a-river at-the-end-of she-came, riverwards at-the-end she-came: there looking

ra'oł. Aruruyeł ronten kāyăr rotatł'an: kĕłkĕłtłnă lōnna. Yet
she-goes. And-then suddenly a-village she-descried: anglers numerous. There

rotse talyo. Yet ror nił-kŭdzate ni-niyo. Yet no-yedilekuł
to she-started. There from at-a-short-distance she-stopped. There she-took-it-off

tse tĕn'ă a-no-łlelat. Tse yutłen yar rotse talyo,
and a-human-being she-became-again. And riverwards the-house toward she-started,

tse rayitłtłaiha toruno yido-nido. Ronten yet nił-roneka
and they-do-not-see-her whilst she-entered. And-then there the-pair-of-wives

dadletłé, tse ro dotoko ni-niyo, tse ra ye yeł ratalyo.
are-staying, and them between she-stopped, and they her with began-to-speak.

Tse notérna reilantsen karałbāts. Ronten to-rołni: "Ken
And two being they-were-boiling-something. Suddenly she-says-to-them: "What
(both of them)

ron me tŏkŏ rā kălă? Ne-keitlŭktsen me toko nalile'on,"
for it on-top-of grease there-is-not? You-laughing it on-top-of bend-your-head,"

yutłiten ałni; "tse ni kor, kenalikettsen me toko nalile'on,"
the-first-wife she-says-to; "and you too, frowning it over bend-your-head,"

yunekoten ałni. Tse yerotse ta-rataltan. Aruruyeł ułōk
the-second-wife she-says-to. And thus they-began-to-do. And-then the-kettle

yit rotse ronānīłtsĕt tse ta-raltlon. Kĕłŏkĕn ne-ketlŭktsen
in towards she-pushed-them and they-died. One laughing

na-ranālebāts, tse kełoken-kun kenālkĕttsen na-ranalebats.
is-boiled (face or head), and one-again (the-other) frowning is-boiled (face or head).

Tse yutłiten tsorotiya rotsen ne-ketlŭktse ni-yeniłtan; tse kełoken
And the-first-wife the-door toward laughing she-placed-her; and the-other

yuneko rotse kenalkettse ni-yeniłtan, tse tłi no-ideyo, tse
the-wood-side toward frowning she-placed-her, and outdoors she-returned, and

yutaka ro-no-łleyo, tse ses a-no-łlelat. Tse yutłur-ru
up (the hill) she-climbed-again, and a-bear she-again-became. And towards-the-river

ronił'antse taldo. Yutłur kełoken ni-ro-na-radakał, tse
looking she-stopped. At-the-river-bank one comes-back-to-land, and

nił-roneka tłitsena ni-ro-no-idakan. "To-no-lorleya," ni;
the-two-wives riverward-from he-came-back-to-land. "Take-up-(the-things)," he-says;

inten ten'a kala. Rūltłă te-deni, iru. "Ken ron, łĕkĕtŭ,
but people none. Loud he-says-it, in-vain. "What for, in-the-world,

rabe-yin-rollet, kă-te-reita?" Tse to-no-dlekok; yido no-ideyo.
are-they-angry, (as)-it-seems?" And up-(the-bank)-he-ran; indoors he-went-back.

Ronten yutłiten me tse ne-ketlŭk. Ye tse tadle'ih tse
Unexpectedly the-first-wife him to is-laughing. Her to he-says: Hey! and

yor ni-niyo, inten to-ltlon łon! Yunekoten me-yin-rollettse
to-her he-came, but she-is-dead, oh! The-second-wife angry-(looking)

yuneko ronił'an. "Ken ro, łeketŭ me-yin-rollet?" yełni;
on-the-inland-side is-looking. "What for, in-the-world, is-she-angry?" he-says-of-her;

tse yenatłdzĕs. Aruruyeł dzestł yaka ta-atłkăt.
and he-punched-her-in-the-face. Then (his)-fist upwards slipped-up-(on-a-soft-surface).

Yet royeł tłi nīzīł: "Temā yeréronna ko te-tanna?"
There with out he-shouted: "Who (is it) who-killed-them these so-doing?"

nitsen. Inten ta-rabeyiloren kala.
he-saying. But the-one-who-has-done-so-to-them there-is-not.

Tse yero dzāna royeł, yutoko ses ratatł'an, tse ra ye tse
And that day with, up-(on-the-hill) a-bear they-have-seen, and they it after

tāldātł. Tse korokootse ra'oł, ko mo-'oka-te-deyorna. Ra
have-started. And ahead-of-them he-goes, the-one whose-wives-have-died. They

yor niłkŭdzaten ni-rădĕł, inten yet ko-id'oih. Ronten te
from-it at-a-short-distance stop, but there it-is-walking. Suddenly its

tłitł no-dit'on: ronten mo-'ot yilan. "So-'o!" dōnił toruno
scalp it-puts-back: unexpectedly his-wife it-is. "My-wife!" he-utters whilst

yelatłran, tse me yeł te-yetanna rodīrōn.
she-killed-him, and him with those-who-went she-killed-to-the-last.

Rayudenelatłran, iru; tse yutłen kun noko-diletlet,
They-tried-to-kill-her, but-no; and toward-the-river also down-she-ran-(on-all-fours),

tse tetłektsen nenkoroten'a rodiron. Tse yet rotłōron kără
and entirely the-people she-killed-to-the-last. And there after back

no-tałleyo. Nĭtłrŏnă te tłitł kał no-to'oih, tse yurru na-rad'oł
again-she-started. Frequently her scalp off she-puts, and there she-is-going-back,

ruyeł yutoko rotse totson yor ne-ketaltlŭk. Aruruyeł ronten: "Nor
when above from a-raven at-her began-to-laugh. Then suddenly: "But

tsu-untlida," yełni; "ken-lără nor lo'ona na-kal
you-are-not-comely," he-says-to-her; "for-what-use those stones (on)-your-sides

denaliloye? Kăł no-tila, nor keteti tsu-untlida. Nor, kłé
(which)-you-have? Away put-them, for extremely you-are-not-pretty. See, still

ŏrŏtsĕ te-inta ta, nonła-roleltse nenkoroten'a nitelotłrala," yełni;
thus you-be if, for-ages-hence (forever) the-people will-not-kill-you," he-says-to-her;

"nĕtŭră, kał no-tila, atokot!" yełni. Aruruyeł kał
"quick, away put-them, right-now!" he-says-to-her. And-then away

no-yetaltlo, inten ta kada katsen to-lo'one, eite zŏkŏł
she-began-to-put-them, but her forehead upon the-one-that-lies-up, that-one at-least

kał no-ti'ola. "A'a, isi rałte sūurŏtsĕn!" yełni. Tse
away she-did-not-put. "Yes, thus now allright!" he-says-to-her. And

no-tałleyo; tse na-rad'oł ruyeł te dzara kał no-to'oihtse
she-was-going-back; and she-is-going-back while her cap (hood) away to-put (the-putting-of)

ra-no-dlenar. Ronten ye-na-rălenik: kał no-yutenal'on,
she-forgot Suddenly she-remembered-it: away she-tried-to-put-it,
(she-forgot-to-put-away-her-scalp).

inte ye-nałlenik. Teken yeł ara te-yerét'an, iru. Tseyerotse
but she-missed-it (failed). A-stick also with she-worked-it, in-vain. And-thus

te yar no-ideyo tse yido no-iletlet. Ronten
(to)-her house she-returned and in she-trotted-back (on-all-fours). Suddenly

yakanyoza mu-ura neleket, tse yuneko royi ralerał, inte
the-baby his-elder-brother was-afraid, and woodwards in-a-hole he-fled, but

me-ketła teken yoza ulnik tse yo kŭł rotora a-royi-kerétyeł.
his-younger-brother the-stick small took and her neck around thrust-it-to-the-ground.

Inte-royeł: "Suurotsen!" yełni. Tse yet-rotłoron nen tor
However: "Well-done!" she-says-to-him. And thereafter the-ground amongst

ranidatł, tse to 'ōn rutłtsin, tse yet royi rarédatł, tse kota
they-went, and her den she-made, and there in-the-hole they-went, and finally

ses a-ne-raltlat. Roih ron naletłkŭs.
bears they-became. Winter a-part-of I-have-chewed.

The Bear-Skin.

Once there lived a man and his wife, with their children. Many deer did he kill, and summers and winters alike they spent in that one place. But it happened one day that he fell sick. It was a long illness, and slowly but surely he was wasting away. Then he said to his wife, "I have not long to live. When I shall be dead, lay my body in my canoe that is down there on the beach, and put it up in a tree. My bow and arrows and my other things, you will put with me in the canoe."

Shortly after this he died, and his wife laid him as he had bidden her; and she wept. The winter passed; the spring also; and still she bemoaned her loss. Once, very early in the morning, she had gone to the woods to wail as was her wont, when she noticed a small bird perched on a branch above her. "Perhaps he has something to say," she thought; and she listened. The bird spoke: "Your husband is over yonder," he said, "and lives with a pair of wives." "What! what!" said she; "oh! tell me, tell me, and I will give you a necklace of large beads." And the little bird told her all. She went over to the canoe and looked into it: it was empty. The little bird got the necklace, and she dried her tears.

From the cache she took down a bear-skin, which she soaked, and scraped, and stretched. Then she tried it on herself, but it was too tight under the chin, and there she sewed a patch of white fur, to make it fit; and she procured a supply of food for her children, storing it all in the house, and gave them two forked sticks, saying, "If anything should happen, make use of these, and be sure not to leave the place whilst I am away."

After this she left the house, and, putting on the bear-skin, she was changed into a bear. Off she went, speeding on, far, far away, till she reached the foot of a high mountain. There she stopped. The ground was strewed with flat stones, and, picking up four of these, she placed one on each of her sides, one on her back, and one on her forehead. Then she climbed up the mountain, crossed over the summit, and came to a stream on the other slope. This she followed, looking carefully around as she went, until she spied a village in the distance. She could see the people, in crowds, angling for fish in the brook. There she directed her steps, and when she had come within a short distance, she took off the bear-skin and resumed the human form. She then walked to the nearest house, so cautiously that she entered it unnoticed.

There she found the pair of wives. She stood between them, and they began to converse with her. Each of them had her kettle on the fire and was boiling some food. Suddenly she said to them, "How is this? there is no grease on your stew?" "Look," she said to the first wife, "bend your smiling face over it, and see!" "And you too," this to the second, "bend your frowning face over it and see!" They did as she told them, and suddenly grappling their necks, she plunged their heads in the boiling kettles, and they died. The one preserved her smile on her boiled face, and the other kept her frown. She placed the first one, with the smile on her face,

next to the entrance, and the second, with the scowl on her face, a little back towards the inland side. This done, she went away, up on the hill, and again she changed herself into a bear, and there she sat, waiting.

Soon there was a canoe coming back. It stopped in front of the two wives' house, and the man, stepping ashore, called to them: "Come and fetch the load," said he. No one answered. He repeated his summons, shouting it, but not a stir. "What in the world is the trouble now?" He ran up to the house and entered. There his eyes fell on the first wife, her face all in smiles. "Hey!" he exclaimed, and stepped near to her, but he found her dead. He turned and saw the second wife looking at him with a frown from the other side of the house. "What made that woman mad?" he said, and he dealt her a blow in the face. But his fist thumped on a soft, slippery mass of boiled flesh. Then he uttered a loud scream. "Who has killed these women?" he said. There was no answer: the one who had done the deed was not to be seen.

On that same day the people of the place noticed a bear on the hillside, and started to chase it. The man whose wives had been killed was foremost in the pursuit. Though they had come close to it, it did not run away: it kept walking slowly ahead. All at once it shook back the scalp off its head, and he recognised his wife: "My wife!" he exclaimed. The words had hardly passed his lips than she suddenly rushed upon him, and killed him. They closed upon her, but she defeated their attempts, and killed them all, to the last. Down to the village she ran, and killed the remainder of its inhabitants.

Then she started back for her home. On the way she was careful, every now and then, to push back the bear's scalp off her head. A crow came flying by, and began to laugh at her. "You really do look very ugly," he said, "with those stones on your sides. Take them off; they make you look so ugly. Why! no man will ever hunt you, as long as you have such an appearance." So she took off the stones, except the one on her forehead. "Now, this is better!" said the crow and she went her way.

But, meanwhile, she had forgotten to move back the bear's scalp, and now that she thought of it, she could do it no more. In vain did she try to pry it off with a stick: it would not come. So she remained a bear, and thus trotted back into her house. The elder boy was frightened, and ran away to hide himself in a hole; but the younger one took one of the forked sticks, and catching her neck between the prongs, brought her head to the ground. "Well done!" she exclaimed.

After this they took to the wilds; she made a den for herself, and they went into it and became bears, all of them.

I have chewed off a part of the winter.

NOTES.

This story, as well as those which I shall give hereafter, does not properly belong to the class of historical myths, but rather to legendary narratives. The

facts recorded are not now generally believed, though there is sufficient evidence that they were once believed and accepted as historical truths. In this story, for instance, the bear is the avenger of a woman's wrongs, and works its vengeance directly and specially against two women. In several other stories the bear appears as peculiarly hostile to women. The peculiar fear which the Ten'a women have of the bear is traceable to no other source than these legends, in which the bear is always represented as the woman's deadly foe. Now, as this fear exists, and is universal among the Ten'a women, it is fair to conclude that, even though they profess to disbelieve the stories, there is still some vague and unconscious admission in their minds that the stories have been or might have been true. The same may be said, I believe, of ghost-stories among more civilized races. Even if we consider them devoid of any historical value, the stories of this group present a twofold interest to the Ten'a student: 1st, as specimens of the genuine language and literature of this people, and 2nd, as illustrations of native customs.

"sĕs," the black bear, *Ursus Americanus* of the naturalists, the most common species in Alaska. The Navajo call it "shash," which is evidently the same root.

"lĕł," for "łĕł" skin. The initial "ł" is softened to "l," on account of the close connection to the preceding word.

"nił-kŭnka," a married couple, a husband and wife. The word is built as "nił-tsu-kalayu" (see p. 301), viz., with "nił," reciprocal pronoun, "kŭn," husband, and "ka," the pluralizer. Instead of "kŭn," the other term of the relation, "'ot," wife (plural: "oka") could be used, and "nił-'oka" is heard as often as "nił-kŭnka," with exactly the same meaning.

"rănŏyă," deer or caribou (*Rangifer caribou*, of scientists), also known in the upper dialect as "mĕdzĭh."

"lōn," many, for "lōne," which grammar would require.

"ei," the definite article, or the demonstrative which comes nearest to it. Pronounced as a long "i" (continental). I spell it "ei" because all its derivatives in the upper dialect present the two sounds very distinctly: "eit, eiten, eina," etc.; and in the lower dialect have "oi" instead of "ei": "oit, oiten, oina," etc.

"sān," summer. Like most names designating time or place, it can be used adverbially without a preposition.

"rŏih," winter. An exception to the rule just given: hence we have "roihtor," lit. "when it is winter," or perhaps: "roihdo," for "roih dona," during the winter. The fact that the family remained in the same place for both seasons shows that it was a remarkably good location, which could supply food in summer as well as in winter. Usually the Ten'a have to migrate from their winter camps in summer, and conversely, because fish and game have different habitats.

"kĕtĕtĭ tă-rănīł," he becomes very much, viz., ill. This ellipse is common: "keteti te-neta," he is very, viz., sick, etc.

"yăkăt," there, then. The demonstrative adverb, designating the remote place or time. It has here the force of: by and by, after a while, in a few days.

"kō," the bow (and arrows), taken collectively or separately. Nowadays the word is often used for "gun," this arm having superseded the bow.

"dīlŏyă," things, chattels; all the ordinary possessions considered as private property, such as blankets, clothes, cup, knife, etc. It was customary to deposit these at the grave of their proprietor, as no one would use them after his death.

"taka to-rūlał," put up. The Ten'a have adopted the method of burying underground since the Russian times, but previous to these their method was to bury on the trees. Very commonly the canoe was used for this purpose; in other cases the body would be simply wrapped in blankets or skins, and suspended to the branches, as a bundle, swinging in the wind. Or again, it would be deposited on a platform raised on four posts, some 8 or 10 feet above the ground, after the manner of a cache. When it was considered expedient, they even left the body on the level ground, building a sort of little house or erecting a small tent over it. Since they have adopted the custom of burying underground, it has become a general practice among the Ten'a to erect these little houses or tents over the graves, and they are generally kept in very good order, being frequently visited and repaired by the relatives of the deceased.

"sānkăkā," a small bird, literally: a summer animal. The term is applied exclusively to the smaller migratory birds, which leave the country during the early fall and return at the beginning of summer. The geese and ducks are not comprised under this appellation, because they come back during the spring ("rŏlŭkŏt"), and before the real summer.

"răn'ăih kāt," he wishes to speak: elliptical for "răn'ăih tsŏ-rŏkāt." This turn, though very easy to understand, is quite uncommon. I do not remember having heard any other instance of it.

"īrū," perhaps. It is not often that this adverb is used in this sense. It generally expresses an after-thought negation, and is equivalent to: "but no...," "in vain," etc.

"yŭ'ŭtsĕnă," over yonder. The designation is very vague, but as we shall see later that she goes unhesitatingly to the place, it is understood that the bird gave her the full particulars, where it is said that: "rołītse ye noroł rolenek," he told her perfectly about it.

"nīł-rŏnĕkă," a pair of wives; lit. on the inland side ("nĕkă, rŏnĕkă") of each other ("nił"), one on the inland side of the other. A Ten'a was allowed two wives, and when he had them, he used to sit between the two, facing the entrance of the house, *i.e.*, the upstream direction. The wife who ranked first sat at his right hand, *i.e.*, to the river-side, and was styled "yutłiten." The second wife

was at his left, to the inland side, and from this position was called "yunekoten" (see the notes p. 305). If there were no second wife, no use was made of the term "nēkă" or "nĕkŏt" to describe the household; hence its use is particularly appropriate to designate the presence of a second wife.

"no-no-dōlekūł," she took down; lit. she took down again. It is implied that she took it from the cache, this being the normal receptacle for such articles. A cache essentially consists of a platform of sticks, on four posts, standing some 6 or 8 feet above the ground. When nothing more than these essentials is present, it is called "tŏrtsĕł"; if the platform is covered by a small structure in the shape of a cabin, it is designated as "tsō." The cache is the storehouse of the Ten'a. On it the provisions and skins are practically safe from the depredations of mice, dogs, etc.

"lo'on tūska," flat stones. They are often used as talismans. The most common amulet, the "mādza," is a flat, translucent stone.

"no-yedilekuł tse ten'a a-no-łlelāt." The transformation of a human being into an animal by donning its skin, and the reversion to the human form by doffing it, are of common occurrence in the folklore of all the Athabaskans.

"kărăłbāts," they boil something ("ke") undetermined, that need not be specified.

"rā," oil or grease, especially when liquid. The "r" is almost velar.

"ne-kēitłŭktsen...kenălīkĕttsen," thou laughing...thou frowning. These characteristics seem mentioned only to describe the persons more accurately.

"ronānīłtsĕt," expresses an action performed with a strong and quick jerk, on a round object, which is understood to be the heads of the two wives.

"nă-rădăkăł," is canoeing back. "Back," because he has started from the place.

"to-no-lorleya," carry up, viz., the things which are in the boat. Any one, on landing, is welcome to claim this service from the bystanders, but he is absolutely entitled to it from his wife (or wives) and children.

"łĕkĕtŭ," an interjection or adverb expressing displeasure, used in scolding, threatening, etc.

"yutłiten," the first; "yunekoten," the second wife.

"ye tse tadle'ih," he said "Hey" to her. The verb "tege'ih" expresses the uttering of the special interjection "hé," pronounced with a touch of nasality and almost like the French "hein!" It denotes dissatisfaction and contempt, and is of very common occurrence. The nasal sound of the "é," and especially the tone and mode of utterance distinguish it from another "hé," which is simply a wondering interrogation.

"łōn," expressing surprise.

"tĕmā yerērōnna ko te-tānna?" who is the one who killed these? The phrase presents a slight irregularity, the pronoun "tema" being in the singular, and the suffix-noun appended to the verb, "yeréronna," in the plural, as if one would say: "who is the one who have killed them?" or in Latin, "*quisnam eas*

occiderunt?" Another irregularity appears in the use of "te-tanna," those who have done this, instead of "te-netana," those who have suffered this. The grammatical form would be either: "Tema yeréronen ko te-netana?" or "Tema-yu yeréronna ko te-netana?"

"mo-'oka te-deyorna"—whose wives have died—again the plural "te-deyorna," is used for the singular: te-deyoren. A correct speaker would use "te-deyoren" in our days.

"so'o," for "so-'ot," my wife.

"tłĭtł," the scalp or skin of the head. It appears from the narrative that if she allowed this to stick to her head she would be unable to take off the bear-skin and return to the human form. I could obtain no elucidation about this point. The raven, evidently interested in avenging the death of her victims, succeeds in turning her attention away from this point, by appealing to her vanity, and thus brings the misfortune on her. Why she, or any other bear, should wish to be hunted or killed by men, is another obscure point, about which my authorities could not or would not, supply information. Their inability to do so would suggest that these obscure points are allusions to some antiquated legends of which they were not cognizant.

"yăkănyōza," the baby, *i.e.*, the youngest child. The context shows he was not an infant.

"yo kŭł rotōra a-royi-kerétyĕł." He took the forked stick (as his mother had directed him before leaving) and, pressing it on the bear's neck which he held in the angle, brought her neck to the ground.

"sūūrōtsen!" an interjection of approval, because the boy did as he had been told, or because he showed strength and courage.

"nĕn tor," literally: among the ground, *i.e.*, in wild, unfrequented places.

"to 'ōn rūtłtsin," she made her own den.

"yet royi rarédātł," they all went into it: the form "datł" of the ending implies at least three subjects. They went in to sleep, for the bears get into their dens only to hibernate. The cubs always hibernate with their mother until they are grown.

"ses a-ne-raltlāt," they became bears—the multiplying prefix "ne" shows that more than two, and consequently the three of them, are involved in the statement. The story ends, like that of the Man-Eagle, Teleł-Tena, by the final transformation of men into beasts.

This narrative is in the upper dialect, although it presents no terms or expression exclusively proper to it. Only a few turns, and grammatical forms, occur which enable the student to detect its origin. I copied it from Father Ragaru's transcription and tested the exactness of the language by reading it many a time to various Ten'a audiences. It was always perfectly understood and declared to be quite correct.

Midŏya.

The Canoe.

Ko rél' tsorotan: nił-tsukalayu rél' ledo. Me-l'ăyu
Here perhaps we-live: a-grandmother-and her grandson perhaps stay. His-uncles

nitse adĭhtł. Rabāde ni-rodelelih. Ko me kōya
down-river go-frequently. Without-them it-has-become. This her grandson

ko-yīni-tałlelĕt, tseyerotsen nīłtor tēn'a talyo, tse yar
has-begun-to-muse, and-so (by-a) through-brush trail he-went, and a-house

rotatłtsin. Dza na-ad'oih; māden dzan rŏlĕk, răłtsĕn łāts yăn
he-began-to-build. Off he-goes-again; without-him days pass, at-evening mud only

nelantsen dza na-ad'oih. Orotor me tsukal te-yełni: "Ken
he-being out he-comes-again. Then his grandmother says-to-him: "What

te-rénł'an?" yełni; "to-rénnartse ei łats yan
have-you-been-after?" she-says-to-him; "what-happened-to-you that mud only

inlan?" yełni. "Toneko tiłtsaa ōkō rosnor," yełni.
you-are?" she-says-to-him. "In-the-woods, mice in-search-of I-dig," he-says-to-her.

Tse kéih yeł korüts yeł kōko talyo. Tseyerotsen kéih
And birch-bark also, (canoe)-ribs also in-search-of he-went. And-so birch-bark

yeł korüts yeł no-kedāderan, tseyerotsee ni-tlo-kenīton.
also canoe-ribs also he-brought-back-in-bundles, and-so he-framed-a-canoe.

Tseyerotsen me tsukala ko-yedatłkōn. Tseyerotsen me-koya ketatłrüts
And-so his grandmother sewed-it. And-so her-grandson makes-the-ribs

toruno, me tsukala dzăr oko talyo. Tseyerotsen dzar te-réł'an,
whilst, his grandmother pitch in-search-of went. And-so pitch she-got,

tseyerotsen yiłdzāk, tseyerotse to-yeréton. Aruruyeł
and-so she-pitched-it, and-so he-launched-it. Just-then

yunłur-yudotsen tĕtsĕn zĕnă meł-ra'oł, tseyerotse ye dōra
from-overland-downstream geese black are-flying, and-so them in-front-of

ni-ko tadledzĕl, ye dora no-detokał-to-roron. Inten me
off he-began-to-paddle-quick, them ahead-of in-order-to-canoe-across. But him

dora meł-yul'on, tse ni-ro no-idakan, tseyerotsen yerutłnăr.
in-front-of they-flew-and-passed, and to-land he-paddled-back, and-so he-destroyed-it.

Tseyerotsen kun kĕtĕnĕ na-atłtsin, tseyerotsen kun to-no-yeréton.
And-so again another-one he-made, and-so again he-launched-it.

Aruruyeł yunłur-yudotsen ketiłronodāla meł-ra'oł. Tseyero kun
Just-then from-overland-downstream ducks are-flying. And-thus again

ye dora ni-ko tadledzeł. Aruruyeł kūnūn me dora
them ahead-of off he-began-to-paddle-in-a-rush. And-then again him ahead-of

no-meł-yul'on; tseyero ni-ro no-idakan. Tseyerotse kunun
they-again-passed-flying; and-so to-land he-paddled-back. And-so again

ye-no-rutłnar. Tseyero kunun midoya na-atłtsin, tseyerotse to-no-yeréton.
he-destroyed-it. And-so again a-canoe he-made-again, and-so he-launched-it-again.

Aruruyeł yunłur-yunitsen tsŏrŭl nitse meł-ra'oł. Tseyerotse ye
And-then from-overland-above small-ducks downstream are-flying. And-so them

dora ni-ko no-tadledzeł, tse rŏtĕkăł ye dora ketse
in-front-of off he-rushed-paddling, and at-last them ahead-of backwards-again

no-tadledzeł, tseyero kunun kara ye dora ketse
he-rushed-paddling, and-so again backwards them ahead-of back-again

no-tadledzeł; tseyerotse ni-ro no-idakan. Tseyero kota,
he-rushed-paddling; and-so to-land he-paddled-back. And-so now,

sŏkŏł, teken-tlok, kéih-tlok yeł yi-keitalron. Tseyerotse
(wooden)-ladles, wooden-dishes, birch-bark-baskets also he-began-to-make. And-so

kota, eite réron, tseyero kota tsei yi yerélo. Te
now, these he-has-made, and-so now the-boat in he-put-them. His

tsukal ta-ałni: "Ro aneka łats yan eslantsen dza
grandmother he-says-to: "You-know in-the-woods mud only I-being out

na-rast'ok ru, niłtor ade-turūłnih," yełni. Tseyerotse ni-ko
I-came-back whence, through betake-yourself," he-says-to-her. And-so off

nikan, eit răr̆ănŏ lekan. Aruruyeł yudoo ronten nĕłtĕn-băs
he-paddled, out-of-sight he-canoed. And-then downstream, oh!-wonder, large-knives

no-idetütł; eite ronten nił-nōmen no-dokoih: ye dŏtŏkŏt todoo
stretch-across; these oh! across-each-other are-moving: them between downstream

ror iledzeł. Aruruyeł toneko niłkootsena todoo midoy tĕgă
through he-paddled. And-then on-the-banks on-both-sides below canoes broken

yan rulan. Aruruyeł rakał; aruruyeł yuneko-yudoo kōskŏnōn
only there-are. And-then he-canoes; and-then inland-downstream a-meeting-house

rulan. Eit ni-ro nikan, ko rodootsen yar yido-niyo; eit
there-is. There to-land he-came, there below house he-entered; there

raye-kerél'on. Aruruyeł yuutsen moko ro-ketserélłan: "Noot
they-gave-him-to-eat. And-then from-near-by for-him we-sent-some-one-in: "There
(= a-messenger-came)

keteré'onten yuutse ro-rūyo, nizeni," yełni. Tseyerotse
where-you-will-eat from-hence go-in we-say-to-you," he-says-to-him. And-thus

yu'an ro réyo. Raye-kerél'on; yet rotłoron ta-rayełni:
in-the-other-place he-entered. They-fed-him; there after they-say-to-him:

"Tĭh te-tsuł'ik," rayełni, "yaka tŏdzărkāt." Ronten rotsŏr-no-réket;
"Let-us-wrestle," they-say-to-him, "there (in-the-)corner." Behold, a-curtain-was-hanging;

eit rotortsen toyartsen ronten rotlūla roleyaih. Tse tih ta-ral'an, tsarałte
there at-the-bottom from-under behold flames are-coming. And they-wrestle, and

ko nikanen yet royi tsunitar, iru; inte rałte
this who-has-come-in-canoe there in-the-hole we-try-to-throw, in-vain; but however

yar no-noletlek. Tseyerotse kota, roro-rēināltsōn, ko tih ta-ral'an
the-house across-he-jumped. And-so now, they-are-tired, this wrestling

tse-rora. Tseyerotse kota yutłit rodalkonten royi rayerétak,
by. And-so at-last riverwards where-fire-burns in-hole they-threw-him,

tseyerotse tłi no-tadleraɬ. Tłi no-ileraɬ to-runo ra-korodenadlelih,
and-so out he-fled-back. Out he-flees-back whilst the-house-tumbles-down,

tseyerotse tsei yi na-raleraɬ. Aruruyeɬ ma ka ronten kün-ten'a
and-so the-boat into he-flees-back. And-then him after, behold, a-man-of-fire

talyo. Tseyerotse ko yunła-yunit niɬ-nomen no-dokoihten
goes. And-so the ahead-above-(place) across-each-other it-moves-where

tone'u ror no-iledzeɬ, toruno ma ka kŭn-ten'a ra'oɬ. Tsaraɬte
above-(this) through he-paddles, meanwhile him after the-man-of-fire goes. And

sokoɬ ta-aɬroihtɬ, me midoya ditīkoih dona. Tseyerotse
the-ladles he-throws-overboard, his canoe begins-to-burn while. And-so

sokoɬ ta-aɬroihtɬ, tse kota sokoɬ rodīnik. Tseyero kota
the-ladles he-throws-overboard, and now the-ladles he-has-finished. And now

teken-tlok kun te-tatɬ'an, tseyero kota eite rodinik. Tseyero
the-wooden-dishes also he-begins-to-use, and now these he-has-finished. And

kota kéih-tlok kun te-tatɬ'an. Kota, te yar totɬura-todotsen
now the-birch-baskets also he-begins-to-use. Finally, his house riverwards-below-(of)

na-radakaɬ toruno, kota tsă-ătĕyĕ kéih-tlok to-no-réɬraɬ; tseyero
he-canoes-back whilst, at-last, the-last birch-basket he-threw-overboard; and-so

kota ni-ro no-iledzeɬ. Kota ko yutɬit me midoya kun dikon,
now to-land he-rushes-paddling. At-last there on-the-bank his canoe also burns,

tseyero kota yur ūkă ronitse ru ni-na-rale-koihtɬ toruno to
and now somewhere an-eddy above there he-is-running-back while his

royar rotse no-tadleral. Kota, ko yar rutɬtsinten yido-ileraɬ,
big-house toward he-is-fleeing-back. Now, the house he-has-built he-enters-in-flight,

tseyero yar kéɬten rodikon. Kun yar kéɬte-kun ronikon; kun yar
and house one burns. Also house one-again (another) burns; also house

kéɬte-kun rodikon; kota, yar kéɬte royan rulan. Tseyero kota, tsukaɬ
another burns; now house one only there-is. And finally, the-old-woman

ta-aɬni: "Tsukaɬ, nor līk dzăra!" Tseyero kota me tsukala ɬik
he-says-to: "Granny, that dog's ear!" And then his grandmother the-dog's

dzara a-dadleküts. Kota, ɬik talziɬ. Aruruyeɬ nilkaatsen yōbăra
ear bit. Now, the-dog howled. And then from-both-sides the-horizon

rotsen no-rotedeni. Kota.
from it-thunders. The-end.

The Canoe.

There was a certain village, where a grandmother and her grandson lived. The uncles of the young man used to take trips down river. They were gone on one of those. Then the young man became very pensive, and took the trail towards the woods. There he began to build a house. Every day he would go to his work and be absent the whole day; and when he came back in the evening he

was covered with mud. Then his grandmother would say: "What have you been doing? what happened to you that you are all covered with mud?" And he would answer: "Oh! I was only digging for mice, over yonder in the wood." And, after he had finished this work, he went in search of birch-bark and birch-wood fit for canoe-ribs, and he brought these home, carrying them bundled on his back. And he set up his canoe-frame. The old woman sewed the birch-bark, and while he was setting the ribs, she went for pitch. And she got some and caulked the seams and he launched the canoe.

Then he saw a flight of black geese coming up the river from the hill-side, and he rushed to paddle across, so as to get on the other side before they would pass the place. But they flew past him before he could get to them. And he came back to land and broke his canoe to pieces. Then he made another one, which he also launched. And seeing a band of ducks that were flying up-stream from the hill-side, he hurried to paddle off, intending to cross the river before they should reach him. But again they passed, flying in front of him. Then again he broke the canoe to pieces. After this he made a third one, and launched it. And there came some small ducks flying down-stream from the hill-side. Again he hastened to paddle across before they would pass, and at last he succeeded, not only to cross to the other side, but even to come back again to the same side whence he had started before they passed him. And thus he came back to land.

Now then he began to make a number of wooden ladles, and wooden dishes, and birch-bark baskets. And when he had finished these he put them in his boat, and said to his grandmother: "Betake yourself to the place where I used to go, at the time when I was coming back covered with mud every evening."

Then he paddled off and soon disappeared behind a point. And as he was going down the stream he saw far ahead, below him, large knives that reached from one bank to the other, and were moving so as to cross each other, like scissor blades. He went along, however, paddling with all his might, and managed to pass between them, unhurt. Below this place both banks were covered with pieces of broken canoes. He kept going on, till he noticed a large meeting-house, and landed a little below it. There he entered a neighbouring house, and was greeted with a meal. And from one of the other houses a messenger came in, inviting him to another meal. To this invitation he responded, going over to the house whence it had come. After he had eaten they said to him: "Now, let us have a wrestling contest, over in yonder corner." There was a curtain hanging, and concealing the corner, but, at the bottom of it, flames could be seen, issuing from below. He acquiesced, however, and the wrestling began. His opponent was making all efforts to throw him down in the fiery corner; but when he was near to be overcome, he evaded it by making a long jump clear across the house. The wrestlers were getting tired from the struggle. And at last he was thrown down into the fire, and, jumping up, he took to flight.

As he was rushing out, the house came down in a tumble, and he quickly made for his boat. But he was not out of danger, for a man of fire was following

him: he sped back: again he passed the moving knives, the man of fire following after him. His canoe was beginning to burn, and he started to throw his wooden ladles overboard, one by one. And after he had disposed of them all, he used his wooden dishes in the same way. These he finished also, and then threw the birch-bark baskets. He was just throwing off the last one when he came near to his house, a little below it, and landed in a hurry.

And whilst his canoe was ablaze, he ran up, passing the eddy and making for his house. He entered, but the house suddenly caught fire. He ran into another, and this also caught fire, and again into the next, and it also began to burn. There was only one house left. Then he called to his grandmother: "Granny," said he, "the dog's ear." And the old woman bit the dog's ear. The dog howled, and from all around the horizon peals of thunder were heard.—The end.

Notes.

"rél', rél'é," perhaps, an adverb which properly conveys an idea of undetermination and nothing more. I have rendered it as "perhaps" in the literal translation, but its meaning is entirely dependent on the context. Here, for instance, it very exactly answers to "a certain," or the Latin *quidam*. The phrase really, sounds as: "In a certain village there lived a certain grandmother and grandson." In many instances "rél'é" has exactly the meaning of the colloquial "I guess," "I imagine," "I reckon," etc.

"me-l'ăyu," his uncles, lit. his maternal uncles, his uncles on his mother's side. The word "l'a" corresponds to the Latin *avunculus*, whilst the paternal uncle, *patruus*, is "tōya." The hyphen is used between the possessive object "me" and "l'a" to indicate that the word "l'a" cannot be used without a possessive adjective-pronoun. "Yu" is used as a pluraliser.

"adĭhtł," go frequently, the third person singular is used instead of the plural "radihtł," because the subject is close to the verb and precludes amphibology. The verb is in the frequentative phase, and the ending "dihtł" shows that the subject "me-l'ayu" comprises more than two persons; for two, the verb would be: "a'ŭs"; for one: "a'oih."

"rabāde," the personal pronoun "rabe," them, is contracted with the preposition "āde," without.

"ni rŏdĕlĕlĭh," lit. "it comes to the point that," Latin *eo devenit ut*.

"niłtor ten'a," a trail through, viz., the underwood, a passage through the brush. These trails are found in the neighbourhood of every camp, beaten by the natives when they retire to the brush to satisfy the calls of nature.

"dza na-ad'oih," it will be noticed that this verb is used in this sentence with two meanings, "he goes away" and "he comes back." The reason is that it simply expresses the act of leaving the place where he is to move to another.

"łāts yān nelān," he is only mud. The Ten'a phrase answering to our: he is covered with mud.

"to-rénnăr," what has happened to you. This is a regular past of "tesnar," and probably an archaism. In the actual language "tesnar" has only the irregular past: "teseyor," and instead of "to-rénnar," one would say: "to-indeyor."

"tĭłtsăă," mouse, mice. This form belongs to the upper dialect, the lower one uses "tsiłtsaa."

"kéih," means equally the standing birch-tree, the birch-wood and the birch-bark. The context shows that the bark is here meant. The "k" is explodent.

"kŏrüts," ribs, the indefinite pronoun "ke" prefixed to "rŭts," ribs (of boat), and assimilated to the following vowel. The ribs are also made of birch, the small flat sticks used being bent somewhat like our barrel-hoops.

"kōko," in search of. The preposition is "ōko," but as it governs two objects connected by "yeł," it is preceded by a "bracketing ke." The lower dialect might dispense with this "ke," but the upper dialect never omits it.

"no-kedāderān." Again the "bracketing ke." The verb "esraih" is correctly rendered by our western expression "to pack," viz., to carry with an effort generally on one's back, and as a bundle.

"ni tlo kenītōn." He put the bottom in place. The canoe is merely designated by the ending "tih" (Past, "ton,") and the undetermined pronoun "ke," viz., as a thing of the category x, or a hard and long thing. To build a canoe the native sketches on the sand the contour line of the bottom, and plants sticks along this line, forming a sort of mould, wherein the flexible bark shall be laid and forced to assume the desired shape. The building of this outward form is here meant.

"me tsūkāla ko-yedātłkōn," his grandmother sewed it. The strips of bark are sewed together with small roots of spruce split in two, which are called "roīh." So also are patches sewed to cover holes or cracks. The sewing of the bark exclusively belongs to the women, and a man would be ashamed to do this part of the work.

"dzăr," the pitch of the spruce (*'Abies Sitkensis'*), with which all the seams and holes are covered. The pitch is melted, and applied hot.

"to-yerĕton," lit. he put it into the water. The prefix "to," stands for "tū," water.

"yunłŭr-yudōtsen," for the directions, see the notes on p. 305.

"tadledzĕł," egedzĕł is a special verb meaning "to paddle in a hurry."

"no-detōkał to-roron," in order to canoe across. The verb "eskaih" (Fut. "taraskał") expresses "to move in a boat," to canoe, to row, to paddle, etc., or simply to be in a boat that moves and thus share in its motion.

"ketĭłrŏnŏdāla," one of the numerous species of ducks which are found in Alaska. The term is probably archaic or local, and I could not identify it.

"kūnūn," and, again. A form proper to the upper dialect.

"sŏkŏł," the native ladle or large wooden spoon. It is made of the root of the birch or spruce, so as to secure a proper curve, and is used to distribute the food among the members of the family, and also to apportion the dog-feed.

As this is generally evil-scented, the ladle used for dog-feed is never used for the master's table.

"kéih-tlok," the birch-bark baskets are made of a piece of birch-bark folded at the ends and sewed to a rim of birch-wood; they are oblong, varying in size, and perfectly water-tight. The wooden dishes, "teken-tlok," are hewed out of the wood, preferably the root; they are equally water-tight.

"eit rārănо," out of sight, *i.e.*, behind a point or an obstacle of some kind.

"rŏntĕn," an adverb expressing surprise, wonder, etc. Its frequent use will be noticed. It is often impossible to render it exactly in English. One would approach the meaning by using such phrases as "strange to say," "fancy that," "what was strange was that . . " etc.

"tih te-tsūł'ik," let us wrestle. The phrase "tih tetł'an," lit. "I use strength," expresses the wrestling which is one of the native sports, common to the Ten'a and to the Eskimo. The two wrestlers grasp each other breast to breast, each passing his left arm under the right arm and across the back of his opponent, whilst he gets hold of the opponent's pants or belt in his right hand. They then try to throw each other down. There is always an interested circle of spectators, and the wrestlers are often encouraged by their cheers. If the champions be equally matched several hours may pass before one of them succeeds in bringing his adversary to the ground.

"rotsŏr no-rĕ́kĕt," a curtain was hanging. The idea of curtain is contained in the root "kĕt," which expresses that something is stretched, and completed by the adverb "rotsor" (from the preposition "tsor," athwart, as an obstacle to), in the way: something is stretched in the way. Natives used skins as hangings curtains, partitions, from time immemorial.

"kün-ten'a," a man-of-fire, lit. a man-fire, a fire-man. This, according to Ten'a belief, is, as the name implies, a human being who is actually and constantly on fire. He pursues the travellers, and woe to these if he succeeds in touching them or their things, because everything he touches burns to ashes. After a long day's travelling in the winter, the eyes become somewhat tired, and overstrained, and when darkness comes it frequently happens that we see sparks at a distance, along the line of trees. These sparks, which I think are mere creations of the strained optic nerves, are believed by natives to be the "kŭn-ten'a," showing through the woods.

"ditīkoih," begins to burn. An instance of the Present Inchoative in a verb of the third flexion, which is a rare occurrence.

"uka ronītse ru," above the eddy. The "ru" qualifies "ronitse," "somewhere above."

"yido īlerał." The verb "egarał," I flee, implies a marked fear causing one to run away.

"łik dzăra a-dādleküts," she bit the dog's ear, viz., to make him howl. The howl of a dog is supposed by many to scare the "kün-ten'a." It succeeds here, and the mischievous being disappears amid the thunder and lightning.

"kŏtă," the end. This adverb has a broad meaning, which may be rendered by: enough, that is all, there is no more, etc. In other connections it simply denotes a change of circumstances from one sentence to another.

This tale, as evidenced by some of the preceding notes, is in the upper dialect. It was obtained by Father Ragaru from some Koyukuk natives. The text here given has been revised by Andrew Keniyo, of Tsenoketlarten, on the Koyukuk River.

Sŏltān-lĕkĕdză.

The Woman-Porcupine.

Ko rél' tsorotan. Eite rél' soltan tobāna tsără-dādlĕdō.
Here perhaps we-live. Here perhaps a-woman on-the-beach weeping-sits.

Aruruyeł yudotsen tārkŭdză dza niban, tseyero totłi tobana
And-then from-below a-mink out swam, and-so riverward on-the-beach

me tłitsena ni-ro yiniban. Aruruyeł te-yełni: "Tŏ-dīnī, se
her riverward-of to-land it-swam. And-then it-says-to-her: "What-say-you, my

ka, to-dini?" yełni. Aruruyeł: "Yunetse-yunit kéih yeł
friend, what-say-you?" it-says-to-her. And-then: "Across-above birch also

tsĕbă yeł nił te karanādeyōnte rokāt," yełni.
spruce also each-other among the-place-where-they-grow (I) wish," she-says-to-it.

"Toni eyét rotsen se ka ka to li'oih," yełni. "Nor ne ka
"Upstream there to my tail on up come," it-says-to-her. "But your tail

kŭn-kăstł kanta," yełni. Aruruyeł te-yełni: "Nĕkĕtł tŏzĕyŭk!"
a-poker-stick is-like," she-says-to-it. And-then it-says-to-her: "A-nose too-large!"

yełni; "Neketł tozeyuk! To-deni ără?" yełni.
it-says-to-her; "A-nose too-large! What-says-she indeed?" it-says-to-her.

Tseyerot yune'u tobana ra-no-idaban. Tse kłé atsar. Aruruyeł
And-so up-above to-the-beach it-swam-up (stream). And still she-cries. And-then

yudotse ronten mĕlāzŏnă dza niban. Tseyero totłi me tłit
from-below suddenly an-otter out swam. And-thus riverward her riverside-of

ni-ro yiniban. Aruruyeł: "To-dini?" yełni. "Yunetse-yunit tseba
to-land it-swam. And-then: "What-say-you?" it-says-to-her. "Across-above spruce

yeł kéih yeł nił te karanadeyonte rokāt," yełni.
also birch also each-other among where-they-have-grown (I) wish," she-says-to-it.

"Toni yet rotse se ka ka to-li'oih," yełni. "Nor ne ka
"Up there to my tail on up-come," it-says-to-her. "But your tail

kŭn-kastł kanta," yełni. Aruruyeł: "Neketł tozeyuk! To-deni
a-wooden-poker is-like," she-says-to-it. And-then: "A-nose large! What-says-she,

ără?" yełni. Tseyerot yune'u tobana ra-no-ideban, ko
indeed?" it-says-to-her. And-so up-above to-the-beach up-swimming-it-went, this

melazona. Toruno kłé atsar. Aruruyeł yudotse ronten nōy'ă
otter. Meanwhile still she-cries. And-then from-below suddenly a-beaver

dza niban. Tseyero totłi me tłi ni-ro yiniban. Tseyerotsen:
out swam. And-then riverward her riverward-of to-land it-swam. And-then:

"To-dini?" yełni. Tseyerotsen: "Yunetse-yunit tseba yeł kéih
"What-say-you?" it-says-to-her. And-then: "Across-above spruce also birch

yeł nił te karanadeyonte rokat," yełni. "Toni yet
also each-other among where-they-have-grown (I)-wish," she-says-to-it. "Up there

rotsen se ka ka to-li'oih," yełni. "O'o, o'o, o'o. Tła su ułōka
toward my tail on up-come," it-says-to-her. "Yes, yes, yes. Wait my kettle

yeł, se tłăbāza yeł, se bětsĭdăkŏkă yeł koko to-ne-tarast'oł," ni ko
also, my round-knife also, my housewife also for I-shall-go-up," said the

soltan. Tseyerotsen tu ułoka yeł, te betsidakoka yeł, te tłabaza yeł
woman. And-so her kettle also, her housewife also, her round-knife also

noko no-kedileyo. Eite ye ka ka to-letlo, tseyerotsen yunan-yune'u
down-the-bank she-brought. These its tail on up-she-laid, and-so across-above

me yeł no-yetalban. Tseyerotsen ye ka katsen rodiłkon; tseyerotsen
with her it-started-to-swim. And-then its tail upon she-made-fire; and-then

ułok tłakat niłkur, tseyerotsen ye ka ken ra'an rodenedetole
the-kettle in-the-fire she-heats, and-then its tail at-the-base-of off a-cut-piece

delebats. Tseyerotsen to nidzeru me yeł ni yobał. Tseyerotsen:
she-boils. And-then water in-middle-of her with it-was-swimming. And-then:

"Ătłĕbă se kĕn!" ni ko noy'a. Tseyerotsen ka tadlerał, ye yeł
"Burning my rump!" said the beaver. And-then its-tail it-jerked, her with

ka tadlerał. Tseyerotsen ko soltan me ka ka to-yiledonen ta-raletlet,
its-tail it-jerked. And-so the woman its tail on up-sitting fell-in-the-water,

tseyerotsen ta-dalekōts, tseyerotsen tără tonana no-talyo.
and-then she-sank, and-then at-the-bottom to-other-side she-walked-across.

Tseyerotsen tara tonana na-ra'oł. Aruruyeł tu ro
And-then on-the-bottom to-other-side she-walks-across. And-then water out-of

tłé-niłkoih. Tseyerotsen to-lyo. Aruruyeł tuur ronten niłtor
her-head-she-pushed. And-then up-she-went. And-then there unexpectedly through

no-tłi-ideton. Tseyerotsen tuur tseba telo-ro diyo. Tseyerotsen
there-is-a-trail. And-then there a-spruce to-the-top-of she-climbed. And-then

tuur tseba detal'on. Aruruyeł: "Ne inketłtor tu nerélōt é?"
there spruce she-eats. And-then: "(In) your nostrils (did) water flow?"

yełni ko noy'a. "Nedan," ni. "Ne dzĭyīt tu nerélot é?"
says-to-her the beaver. "No," she-says. "(In) your ears (did) water flow?"

yełni. "Nedān," ni. "Ne nĕkŏt tu nerélot é?" yełni.
it-says-to-her. "No," she-says. "(In) your eyes (did) water flow?" it-says-to-her.

"Nedan," ni. "Ne lōt tu nerélot é?" yełni. "Nedan,"
"No," she-says. "(In) your mouth water did-it-flow?" it-says-to-her. "No,"

ni. Aruruyeł toyoko niłtor no-tłi-ideton-ru, aru ronten ses
she-says. And-then down through trail-where-there-is, there unexpectedly a-bear

niłtor no-ted'oih. Tseyerotsen ătłĕyĕ-łŏn lĕkĕdză-soltan ko
through is-going. And-so in-reality (it-was) a-porcupine-woman the

te-deréni'in. Tuur tseba do'on, aruruyeł toyoko ronten ses niłtor
one-who-spoke. There spruce she-eats, and-then down behold! a-bear through

no-ted'oih. Tseyerotsen te-yełni: "Toyoko su-ur niłtor
is-going. And-then she-said-of-it: "Underneath my-elder-brother through

on-tsĭtsĕł," a-deli. Aruruyeł te-yełni: "Tālĕk! nor ne kōl'ŏnă
its-dung," she-sings. And-then it-says-to-her: "Shut-up! for thy liver

itarastuł; talek!" yełni ko ses. Kłé te-yełni ko lekedza:
I-will-trample-on; shut-up!" says-to-her the bear. Again says-to-it the porcupine:

"Akĕ! tsekun se kol'ona rulan é?" yełni. Kłé te-yełni:
"Fie! and-but my liver is-there?" she-says-to-it. Again it-says-to-her:

"Talek! nor ne tłĕts itarastuł; talek!" yełni. "Aké!
"Shut-up! for your gall I-shall-trample-on; shut-up!" it-says-to-her. "Fie!

tsekun se tłets rulan é?" yełni. Kłé te-yełni, aruruyeł
and-but my gall is-there?" she-says-to-it. Still she-says-so-to-it, when

noyartse ronten mor to-yedaratłtlet, tseyero yedaratłtusk. Inten ye
from-below suddenly to-her up-it-climbed, and-then it-slapped-her. But its

tlŏrŏt ra-ka-dleroł. Yatsen kun yedaratłtusk, inte ye
palm she-hit-with-her-tail. (With) the-other (paw) again it-slapped-her, but its

tlorot ra-ka-dleroł. Tsekun yedaratłkuł, inten me lōt kun
palm she-hit-with-her-tail. And-also it-bit-her, but its mouth also

ra-ka-yedleroł. Ta ka ara kun yedaltŭł, inten ye kătlŏr
she-hit-with-her-tail. Its feet with also it-struck-her, but its soles

ra-ka-dleroł. Tseyerotsen ko ses na-radetak. Tseyerotsen lekedza
she-hit-with-her-tail. And-so the bear fell-down. And-then the-porcupine
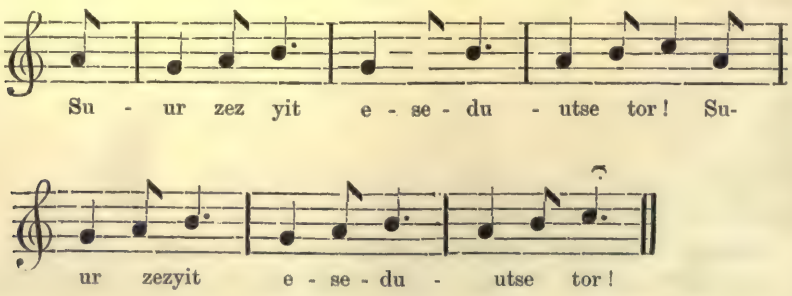
noyéka yor no-réyo. Tseyerotsen ye zĕzyīt to-lyo; eite kun
down to-it descended. And-then (on) its breast up-she-went; this too

ra-ka-radetak. Tseyerotsen kota ses latłran. Tseyerotsen ye
she-hit-with-her-tail. And-then at-last the-bear she-killed. And-then (on) its

zezyit atsŭn: "Su-ur zezyit esedūts tor," ni ko
breast she-dungs: "(On) my-elder-brother's breast I-dung when," says the

lekedza; "Su-ur zezyit eseduts tor!" detalni. Roih
porcupine; "(On) my-brother's breast I-dung when!" she-began-to-say. Winter

ron naletłkŭs.
part-of I-bit-away.



The Woman-Porcupine.

At a certain village, there was a woman sitting on the beach and weeping. A mink came swimming up the river, and it came to the land on the beach in front of her, and said to her: "Why do you cry, friend, why do you cry?" To which she answered: "Because I long to go far up on the other bank to a place where birch and spruce have grown mingled together." Then the mink said: "Ride on my tail, and I will take you up there." But she replied: "Your tail is as slender as a poker." And the mink retorted: "Oh! large nose! large nose! what a silly talk this is!" And it went its way swimming to the other bank far above.

Still she sat crying, when there came an otter, swimming upstream, and it stopped on the beach in front of her, and said to her: "Why do you cry?" To which she answered: "Because I am longing for a place far up on the other bank, where birch and spruce have grown mingled together." The otter said: "Ride on my tail, and I will take you there." "Oh!" she replied, "your tail is like a wooden poker!" Then the otter: "Oh! the large nose"; it said, "what a silly talk!" And it went along swimming far above across the river.

And there the woman sat, still crying. Then there came a beaver, swimming upstream, and on the beach in front of her it came to land, and said to her, "Why do you cry?" And she answered: "Oh! that I could go far above on the other bank, to the place where spruce and birch have grown mingled together." The beaver said to her: "Ride on my tail, and I will take you there." "Yes, yes, yes," she said: "give me time to get my kettle, and my round knife and my housewife." And she fetched her kettle, and her housewife, and her round knife, and brought them down, and put them on the beaver's tail. Then with the woman also on its tail, the beaver started to swim up and cross the river.

But she lit up a fire on the beaver's tail, and on this fire she put the kettle to boil, and in the kettle a slice of meat which she cut from the beaver's rump. The beaver, with its load, was swimming in midstream. "Oh! the heat on my rump!" it said, and it struck the water with its tail, not minding that the woman was on it. Down in the water she fell, and down to the bottom she went, and walking on the bottom she crossed over to the other bank. And walking up to where the water was shallow, she put out her head above the water, and went up the bank. There she found the beaten trail, and she climbed up a spruce-tree, and began to eat the spruce. Then the beaver asked her: "Did water get into your nose?" "No," she said. "And into your ears?" "No," she said. "And into your eyes?" "No," she said. "And into your mouth?" "No," she said. And while they were speaking, a bear came out on the little trail, and began to pace back and forth. Meanwhile she was feeding on spruce, for she was indeed a porcupine woman, and looking at the bear, she said, singing: "Down there my elder brother has covered the place with his dung." The bear said to her: "Shut up, or I'll trample upon your liver!" She answered: "Pshaw! have I any liver?" And

she went on with her singing. "Shut up," said the bear, "or I'll trample on your gall!" "Pshaw!" she replied, "and have I any gall?" Then the bear climbed up to her and with his forepaw he struck her, but she struck his paw with her tail. Again he raised his other forepaw to hit her, but again she struck it with her tail. Then he opened his mouth to bite her, but there also she struck him with her tail. He tried his hind-paws, and on these also she struck her tail. So the bear fell down, and down she came after him, and climbing up to his breast she also struck him there with her tail and killed him. And then she dunged on his breast, and began to sing: "Oh! when I dung on my brother's breast! Oh! when I dung on my brother's breast!"

I have chewed off a part of the winter.

NOTES.

"tsără-dādlĕdō," sits weeping, lit. keeps herself weeping. The usual position of a person mourning is squatting.

"ărŭrŭyĕł," and then, lit. at this moment, at this juncture, from "aru," then or there, and "royeł," with. The upper dialect pronounces the word "ărŭrŏyĕł," the main accent being on the first syllable; the lower dialect pronounces it "ărŭrŭyĕł," with a strong accent on the penult.

"tārkūdza," mink. The upper dialect word; in the lower dialect "tarmāya."

"se ka," a very obscure phrase, which is perhaps for "sa kana," my friend.

"rokât," wishing for. An ellipse for "rōkā testa," I am wishing for. This ellipse is quite common.

"se kă," my tail. The "k" has a strong aspiration, and consequently between "ka," foot, and "ka," tail, there is no other difference than that the preceding pronoun assimilates before "ka," foot: "sa ka," my foot, and does not assimilate before "ka," tail: "se ka," my tail. The lower dialect, however, does not use "ka," but "ke," for "tail," and would have been more consistently: "se ke."

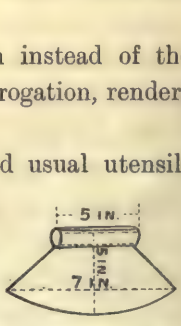
"kŭn-kăstł," a poker or slender stick ("kastł"), used to poke the fire ("kŭn").

"nĕkĕtł," a nose. See further, the note on "ne-inketłtor. (p. 359).

"tōzeyŭk," large. This is the one solitary instance I have of this term, which the narrator explained as meaning "large, capacious."

"to-deni arâ?" what does she say? the use of the third person instead of the second, combined with "ara," an adverb of reproachful interrogation, renders the phrase quite offensive to the person addressed.

"su ūłōka yeł, se tłābāza yeł, se betsīdăkōka yeł," the favourite and usual utensils of a good housewife among the Ten'a. The "tłabas" is a round-edged knife used especially to cut the salmon before drying it, and also to open and clean the fish. The "betsīdăkōka" is a piece of skin or cloth with pouches, in which needles, sinew, thread, scissors, knife, and other such articles are kept.



"dĕlĕbāts," she boils, viz., for herself. If it were for some one else, the verb would be "delbats," or rather "albats." Compare "karalbats," p. 345.

"ătlĕbă," an interjection, and adjective, denoting excessive heat.

"ka-tādleral." The beaver, when diving, always makes a big splash with its tail.

"no-tālyo," she walked across, lit. she began to walk across.

"nilkoih," she pushed, lit. she pushes; she sticks her head out of the water. The verb expresses the action of introducing a thing into a space where it was not.

"to-lyo," she went up. To "go up," when otherwise unspecified, always means to go up the bank. Compare: "to-no-lorleya," p. 345.

"tseba detāl'ōn," she began to eat spruce. In this she is immediately recognized to be a porcupine, by the Ten'a hearers.

"ne-ĭnkĕtltŏr," in your nostrils. The word "neketl," nose (whence "neketltor," nostrils) modifies its first syllable after a possessive pronoun, as here. The upper dialect has: "ne-inketltor," your nostrils; the lower dialect would say: "ne-ninketltor."

"nerélōt," it flowed, lit. it oozed.

"atlcyé-lōn," an explanatory adverb, which means that the clause which it affects gives the true statement, whilst the others refer to appearances.

"su-ūr," my elder brother. The black bear is, in Ten'a mythology, the elder brother of the porcupine, and the brown bear is the elder brother of the black bear.

"niltor on-tsītsĕl," through (the brush) the (his) dung (is spread); supposing "on" to be the multiplying prefix denoting quantity, abundance. The phrase might be constructed otherwise: "niltoron tsitsel": through the brush his dung is (lying); but the meaning is the same. "Tsitsel" is not accurately rendered by "dung," for it properly expresses diarrheous matter, a diarrheous stool, such as the bears commonly pass during summer when they feed on berries. This was sung by the narrator, but I failed to catch the tune.

"tālĕk," a rather rough interjection, well rendered by: shut up!

"ăkĕ," an interjection of disgust, used in connection with anything foul or stupid. The porcupine is supposed to have neither liver nor gall.

"yedaratltŭsk, etltŭsk," is correctly to slap, viz., with the flat ("tŭska") of the hand. Further, when the bear uses its hind feet, the proper word for the feet-action, trampling, is used: "yedaltŭl."

"esedūts." Notice that in the song the long "u" is doubled. This phrase is also sung in the narrative, to the notes which I have written at the end. It is a song of triumph, by which the porcupine celebrates its victory.

This story was obtained from Andrew Keniyo, a native of Tsenoketlarten on the Koyukuk River.

Totsonsa.

The Big-Raven.

Sanlarator rulan. Rałte totsonsa tena te ledo. Nił-roneka
Salmon-time it-is. And a-big-raven us among stays. A-pair-of-wives

radadletłé: ro dotokot letan; łik-łeł tsĕdă ka-dadleket. Eit rałte ko
he keeps: them between he-lies; a-dog-skin robe he-has-over-him. There too his

mōzayu eit dadletłe. Eina rałte dłeł tor ko-ratałledatł ranoy
nephews there stay. These through mountains among are-gone-to-hunt deer

oko. Eit rałte dłeł tor tsenidatł. Eit rałte tozayu yeł
for. There then mountains in we-have come. There also his-nephews with

talyo; rałte kun ranoy rukaih. Na-rayił'ortł. Ra ya
he-went; and also a-deer they-shoot-with-arrows. They-flay-it. They its

ałkat tłete-taldak. Yi-meł-tseniletih toruno ronten nen ŏkŏ
body-at spend-the-night. We-are-all-asleep while suddenly the-ground from

satłnik. Toruno totson (ko nĕlănă yeł ko kŏkŏr yeł yuur
we-got-up. Meanwhile the-raven (the meat also the fat also there

keletlo); eit rałte nen oko tełnih, ko mozayu yi-meł-raniletih
are-laid); then too the-ground from he-gets-up, the his-nephews are-asleep

toruno, tseyero yerodi'ih ko nelana. Kota yerodi'ih, yĕnē'ĭhtsĕn.
while, and he-eats-it-all this meat. Yes, he-eats-it-all, he-stealing-it.

Aruruyeł ronten: "Ha! tłărüză yuutse ni-niyo!" ni; zi
Then suddenly: "Ha! a-brown-bear from-yonder came!" he-says; himself

oden yerodi'on in'é. Nen oko ne-ratełtset, tse kakala. 'Yuutse
he has-eaten-it-all though. The-ground from they-jump-up, and nothing. "From-yonder

ni-niyo," yełni. "Rałte ko se-l'ayu kéłoke sereił'an. Ko meł aden
it-came," he-says-of-it. "But these my-uncles one-only have-me-as. Now sleep without
(= my-nephews)

meł-inalegeten," ni, "rora ketaka te-talesta." "Rabe kŏrŏn
I-went-to-sleep," he-said, "whereby above I-began-to-be." "Them during-the-sleep-of
(a-strange-thing-happened-to-me.)

rałte yéka-na-rasleł, rałte ko kene'ihen eslan ta-rar'ana," yinilen. Yet
though I-was-watching, and this a-thief I-am because," he-thinks. There

tonła kłé rōdeł; aruruyeł ranoya ta-ral'an. Ko kokor yeł tena ro
after still they-go; and-then a-deer they-kill. The fat also us to

no-karaleyaih in'é rałte rodi'ih. Tseyerotse kota na-ratałledatł.
they-give-as-a-portion even-though but he-eats-it-all. And-so now again-they-started.

No-rodedeł. Aruruyeł yaka ronten totson ro meł-ré'on;
They-are-going-back. And-then yonder suddenly ravens up flew;

aruruyeł ronten: "Nĕdănyăkă totson meł-i'onten, mĕdzĭh iłtan
then suddenly: "Wheresoever ravens fly, a-deer they-have-found

kanta," radeni ko mozayu. "Ha! ko netatse te-dornite
it-seems," they-say these his-nephews. "Ha! now how do-you-say

eit? Yor-l'a se yeł rultlanen, eiten suu ditsin, eit ta-rar'ana
there? Your-uncle me with who-was-born, he perhaps starves, this on-account-of
mo rŏtăkă yi-rŏzĕn-keilo," mizeni. Ko yet ni-tsenidatł, aruruyeł
him above black-things-hover," he-says-of-him. The there we-came-to, and,

ronten răn̆ołtă a-raltlan, mo kor rulane. Rałte na-rayitatł'ortł;
behold! a-male-deer they-killed, its fat there-was. And they-flayed-it;

aruruyeł te tłił ro ne-ketaltlo tseyerotse ronten medzih
then his arm about he-put-up-the-clothes and suddenly (in) the-deer's
(=he-tucked-up-his-sleeve.)

kĕyĭ no-dolenik, tseyerotsarałte ye lūł yeł-talnik. Aruruyeł me tłé
anus he-put-his-hand, and-thus its-larynx he-pulled. And-then its head

ni-ko detadlelih. Ko tseyerotsen: "Ha! me kŏtă ne-dordedar,"
upward began-to-jerk. Now thus: "Ha! it away-from stay,"

mizeni; "ro ko se notła ralelen, eiten naratl'an, eiten anta-kon
we-say-to-them; "that the me before who-is-old, him I-have-seen, he it-was-who

tatse ta-rătan." "No-tordedał," rabeizeni. Tseyerotse no-sałledatł.
thus did." "Go-back," he-says-to-them. And-so they-went-on-back.

Ko aruruyeł ronten: "Hé! sa-kărănĭnīk!" ni; rałte ko
Now then suddenly: "Hé! a-devil-has-invaded-me!" he-says; but this
(= I feel cramp or stitch.)

rŏtsēttsen. "Eite taras'on to-roron," yinilen toruno. Tseyerotse
he-lying. "This I-shall-eat in-order-that," he-thinks while. And-so

rotse tadletlet. Ronten ra yor rodiłkon ko 'mozayu.
on-the-ground he-fell. Then they to-him built-a-fire, these his-nephews.

Tuur rałte rodalkon. Aru, kún ără tłi-rayil'uł. Rałte:
There then there-is-a-fire. Then, the-fire close-to they-stretched-him. But:

"Sa kā kelék dorłtsi," rabeizeni; "ulaletłtłontsen," mizeni.
"Me mourning-for songs make," we-say-to-them; "I-hearing-them," we-say-of-it.

Kelék. "Se-l'a! mu-ūnĭyĕyă me ko nileyala! Nedatse te-deyoren,
Song. "My-uncle! the-game him away-from got-not! How-thus became-he,

nor torł'anen? medini, yaka se-l'a."
this whom-you-treat-thus? say-of-him, that my-uncle."

Kun kelék: "Se-l'a! aba kăstă! Ma kā sā-tłĕn
Again song: "My-uncle! sick I-seem-to-be! Him in-mourning-of jaw-bones

keréleyāla! ti, ti, ti, ta, ta, ta!" "Ha! anru me-dorli, nor
have-not-moved! ti, ti, ti, ta, ta, ta!" "Ha! apart sing-them, for

tso-netłaka!" mizeni. "Ato-rōnīt," medini, "kenikełtsen
they-are-no-good!" he-says-of-them. "For-anything," say-of-him, "a-torn-open (beast)

tlŏr ragedo, roro'ano! kootsentsena kō tōlō ko-datłtlaktsen,"
in-hands I-had, oh!-wonder! on-its-back (the)-arrow quills are-scattered-and-wet,"

medini, "yaka." "A'a, a'a," mizeni, "ate te-kōtantsen me
say-of-him, "there." "Yes, yes," he-said, "whenever it-happened him

nŏrŏł-ło te-kotan," mizeni, "ko tatsen. Rałte kél eslan dŏnă
in-presence-of it-happened," says-he, "thus in-this-way. And youth I-was when

rałte yutoko mor ko-nest'oih, ko medzih; orote rałte dzan-tor
then on-the-hills for-them I-go-hunting, the deer; then but (in-one)-day

kéłoke nĕldŏrŭyĕ ranoya rotse teslaih, kélte dzan. Yet
one score (of)-deer to-the-ground I-bring-down, (in)-one day. There

rotłoron tłarŭza yutłura ko-id'oih. Yet rałte me tse tes'oih.
after a-brown-bear riverwards is-walking. Then also him after I-start.

Niłkŭdzate mor ni-nes'oih, tseyerotsarałte yerotsen me dzaya
At-a-short-distance to-him I-come, and-then thus his heart

katsen etłtih; kootsentsena ko tolo ko-dałtlar."
above I-shoot-an-arrow; on-the-other-side (the)-arrow quills are-scattered-wet."

Tseyerotse: "Se-no-korlelon," rabeizeni ronten; "kes'on tso-rokāt,"
And-so: "Feed-me-again," he-says-to-them suddenly; "I-wish-to-eat,"

nitsen. Kokor rabe te-reinaltaye kŭn a-zanilo. Eite
saying. Pieces-of-fat (to)-them equal-in-number the-fire they-put-near-to. These

tetłeke rodi'on: "Ko zi-ałoot se-no-orlelon," mizenitsen. Tseyerotse:
all he-ate: "This for-nothing feed-to-me," saying-of-it. And-so:

"Kota, to-tarastlor," ni. Rałte rabor ni-do-kezani'on: "Yaka
"Now, I-shall-die," he-says. And to-them he-gave-a-message: "Those

so-'oka se tse tū'os," rabeizeni: "kota rałte se-ni-norłnih,"
my-wives me to let-them-come," he-says-to-them: "then too bury-me,"

rabeizeni. Kota, na-ratałledatł, toruno ko an-rayetatłtane
he-says-to-them. Then, they-started-again, whilst this carcass-which-they-abandoned

ra ye ka to-kedatłtłĕł, ra ye-ni niłniktsen. Tseyerotsarałte
they it on chopped-up-branches, they it having-buried. And-thus

na-ratałledatł toruno no-rĕiděno. Ko an-rayetatłtane
they-started-again whilst he-came-back-to-life. This (carcass)-which-they-abandoned

ro ni-no-ideyo; eite tadlerŏł, yetal'ontsen. Tseyerotse
to he-came-back; this he-began-to-devour, having-begun-to-eat-it. And-so

yo'on. Yurru mo-'oka ye tse taldatł. Ei niyo ru
he-eats-it. There his-wives to him are-going. The-place he-came where

ranidatł, rato-kŭn ro ranidatł. Yu'ut ronten ranoy rodi'ih,
they-came-to, their-husband to they-came. Yonder, behold, a-deer he-eats,

tseyerotse ra yor ni-nidatł: "Ro yaka sozayu sor
and-thus they to-him came: "You-know those my-nephews from-me

no-tałledatł toruno no-reseno," ni. Tseyerotse na-ratałledatł,
they-went while I-came-back-to-life," says-he. And-so they-started-back,

mo-'oka yeł, tłiyéka rotsen na-ratałledatł, tseyerotse ka no-rōdedatł.
his-wives with, home towards they-started-back, and-so back they-returned.

Tseyerotse roih non naletłkŭs. Tseyerotsarałte; roihtor rotaltlet,
And-thus winter part-of I-chewed-off. And-so-now; winter is-almost-passed,

yĭněslĕn, aruruyeł: "No'otsen ne te to-rékŭts," sărădĕnī.
I-think, when: "Over-there you around water-flows," they-tell-me.

Yu'utse kōłkāł midoy yit yunan-yudoo ni-ro neskan.
From-thence almost a-canoe in across-below to-land I-paddled.

The Big-Raven.

It was during the run of the salmon. A big-raven lived in the camp. There were also his two wives. He slept between them covered with a dog-skin robe. His nephews lived with him. They went hunting for deer, among the hills. He also went with them. And they killed a deer with their arrows, and flayed it, and they stopped in that place camping near the prey for the night.

Whilst they were all asleep, he got up. The meat and the fat were there laying in heaps about the place. And the raven got up, while his nephews were asleep, and he gobbled all the meat. He swallowed it all, stealing it. Then suddenly he shouted: "Ha! a brown-bear has been over here," said he. But he knew that he alone had eaten it. The others jumped up, and, indeed, it was all gone. "The bear came from over yonder," he said. "And my poor nephews who depend on me alone! I was so drowsy for want of sleep, that I finally dozed; oh! what have I done!" But though such were his words, he thought to himself: "During their sleep, I was watching, for I am a thief."

And after this they went on their hunting trip, and killed another deer. It was cut in pieces and distributed among the party, but, nevertheless, he ate the whole of it. Then they started on their way back. And whilst going they noticed some ravens flying up from a place ahead of them. The nephews then said: "Those ravens must have found a dead deer, and they just leave their quarry." But he replied, "Ha! you do not know what you are talking about! Most likely your uncle, my brother, has been starved to death, and the black things are hovering over him." But when they had come to the spot they killed a large buck, very fat. They immediately set to work to skin it, and as they did so, he tucked up his sleeve and pushing his hand through the animal's fundament seized his windpipe and pulled at it; whereupon the head, by sudden jerks moved upwards. Then he exclaimed: "Ha! keep off! I learned this trick from my elder brother; he was the one whom I saw doing it. You had better go." And the party started to move on. But suddenly: "Ha! I have a stitch in the side!" said he. It was a lie, and he was thinking: "I am going to have a good fill." And he let himself drop down. His nephews built a fire for him; and they stretched him near the fire; and he said to them, "Sing the mourning song for my death, whilst I can still hear it." And they sang.

First Song. "My uncle! no game could escape his pursuit! what has happened to him that you should treat him as a dead man? so should we say of my uncle."

Second Song. "My uncle! oh! what a sorrow for me! no songs have been sung over his death! ti, ti, ti, ta, ta, ta!"

"Ha!" said he, "get away with those; they are no good. This is what you should sing: 'He was the man for any kind of game, in whose hands the game was

always torn open, oh! wonder! his arrows would pierce it through and leave their quills in the skin when they came out from the body. Never did this happen when he was not there.' Yes, when I was a young man, I used to go on the hills, hunting for deer; and I would generally bring down a score of them in a day. And the brown-bear would come, from the river bank, and I would follow him, and walk right close to him, and taking aim at the heart, send my arrow through his body, so that the quills were found on the skin of the back." Then suddenly he said to them: "Oh! give me something more to eat; I feel hungry!" So they took pieces of fat, one for each man, and roasted them by the fire, and he ate all of them, saying to every one: "Make me a present of that piece too." After this he said: "Now is my end, I am going to die." And he gave them a message to his wives: "Tell them to come to me here," he said, "and as for you, you will bury my body," said he.

And they proceeded. But before leaving, as they did not take the meat along with themselves, they chopped branches and trees, and covered it with a pile of wood. They then left, and, as soon as they were gone, he was alive again, and went to the deer-carcase which they had left, and he began to eat, and he devoured it hastily. Whilst he ate his wives started for the place, and when they came and found their husband, he was still eating. He said to them: "Well, you know, while my nephews were on their way from here I came back to life."

And then he and his wives started back for their home, and they returned thither.

And so I have chewed away a part of the winter. And I was just thinking: "Winter must be nearly over," when they said to me: "There! there! the water runs through the entrance all around you! Why! there is almost enough of it for me to take my canoe and paddle across the river."

NOTES.

"tōtsōnsā," the big raven. From "totsōn," raven, and the adjective "sa," The whole story seems to have no other purpose than to illustrate the character of the raven as he appears in the Ten'a lore: a liar, a thief and a greedy glutton.

"sānlārătŏr," the season of the salmon, which lasts from about the 21st of June till the middle of August, but the term especially applies to the middle part of it, about July 10th to 21st. "Sanlara" is properly the silver-salmon.

"nił-ronĕkă radādletłé," he has them to the landward ("neka") of each other, viz., one on the landward, and consequently one on the riverward side. This clearly implies, to the Ten'a hearer, that there are two wives to the one husband.

"ro dōtŏkŏt letān," he lies between them, *i.e.*, the husband. It is unnecessary to

mention him more explicitly, because the preceding statement has made the matter clear.

"łik-lĕł," dog-skin. A dog-skin robe conveys a disgusting idea to the Ten'a, and the narrator is often interrupted here by the interjection "aké!" from the hearers. The dog-skin is not used by them for two reasons: First. That the dog is a domestic animal, a part of the household, and its skin would be a reminder of lost affection, somewhat—though in a less degree—as the clothes of a deceased relation. Second. That the dog-skin unless very elaborately tanned, always retains a smell, which becomes particularly offensive in damp weather. The raven by not minding these inconveniences shows that he lacks the more refined instincts and the more delicate feelings.

"mōzăyŭ," his nephews, "ōza," is the nephew on the sister's side, or child of his sister: a child of his brother would be called "me-yaa." The plural "mozayu," belongs to the upper dialect; in the lower dialect the word is: "mo-ozaka."

"tsenīdātł," the first person plural standing for the indefinite "on" of the French and, consequently, used in narratives for any other person of the verb.

"ăłkāt," a peculiar preposition, which means: at the dead body of.

"sātłnīk," the first person plural, for the third singular.

"tłărüza," a brown or cinnamon bear, *Ursus Richardsonii* of the naturalists. It is much fiercer than the common black bear, and about the only animal of the Alaskan forests which the natives fear.

"zī ōdĕn," or "ōdĕn zī," he alone, by himself.

"se-l'ăyu," my uncles. He speaks of his nephews as his "uncles." The narrator explained that he means to induce them to style him "nephew" as a term of endearment. The real meaning is: my nephews have only me in the world to take care of them. He begins a hypocrite's lamentation over the misfortune.

"mĕł āden meł-īnālegeten," without sleep I fell asleep, *i.e.*, having been so long without sleep I finally fell asleep.

"kĕtăkă te-tālĕsta," lit. I began to be above. "To be above," "ketaka testa," means to do, or suffer, something unusual or strange, as it were: to be above comprehension.

"kōrŏn," a special preposition, means: during the sleep of.

"tōtsōn" ravens, the plural is marked by the verb "ro meł-réon."

"mĕdzĭh," deer, cariboo, the word belongs properly to the upper dialect; the word used above, "rănōya," is common to both dialects.

"dītsīn," he starves, evidently from the same root as the lower dialect equivalent; "ditsan." The upper dialect, however, has now lost the use of this word under either form.

"ranōłta," a male deer. The suffix "łta" designates the male, as also in

"łinłta," a male dog. The word "ranołta" is also used by extension to mean: a large deer.

"mo kŏr rūlāne," a fat one, one that was (is) fat. The phrase is a good illustration of the peculiar use of the noun-forming suffixes. "Mo kor rulan," means "its fat there is," or "it has fat;" with the noun-forming "e," which has the force of "a thing which," the whole clause is turned into a relative clause, and becomes: "the (a) thing whose fat there is," or "a fat thing." Animals belong to the inanimate or thing-gender.

"yĕł tālnik," he pulled. The verb "tesnih," to pull, governs its object by means of the preposition "yeł," with. Prepositional verbs are quite common in Ten'a.

"se nōtłă rălĕlĕn," one who is ageing ahead of me: my senior.

"āntă, āntĕ," an adverb having the force of our term: "it is...who..."

"sa-karănīnīk," is the common expression to denote a sudden pain, a stitch or cramp in the body. It really implies that a devil has come into the body of the person. The devil is here expressed by the undetermined pronoun "ke" together with the verb "ranesnih," which applies to the motion of a ghost or spiritual substance. The phrase sounds literally: "some spirit has come into me," and according to the accepted ideas, this is evidently a devil.

"sa-kā," mourning for me. The preposition "kā, kāt," signifies wish or desire, and consequently also regret, mourning. Here this second meaning is evident from the context, since it is a question of making songs: these are always made in mourning for the dead. He feigns to be so near to his death that they should be ready with their mourning songs for him, and he wishes to hear them sung before he dies.

"kĕlĕk," the song. The songs composed by the nephews are given. Even the narrator could not remember the tune to which they are sung. The words in almost all these songs are choice, and the expressions rather enigmatic.

The first song simply says that he was a good hunter, and how did he come to his death? The second is simpler still, and merely expresses the regret that there was not much mourning over him. The irony in this latter seems to impress the Raven, who immediately expresses his dissatisfaction, and suggests a better song in praise of his exploits. This leads him to a comparatively lengthy description of his achievements, and he shows his vanity and pride in the way he boasts of them. The three songs, as given, are fair types of the average mourning song of the Ten'a. They consist of one or two sentences, couched in very good language, praising the dead person, but without any perceptible metre and generally quite prosaic.

"me ko nīleyāla," did not get away from him; lit. was not taken away from him.

"nor torl'ānen," the one whom you treat thus, viz., the one for whom you mourn.

"ma kā sā tłĕn kerĕleyāla," in mourning for him the jaw-bones have not been moved, or perhaps: they have not moved their jaw-bones.

"ti, ti, ti, ta, ta, ta," these have no more meaning in Ten'a than in English.

"tsō-nětłāka," it is bad. The regular form, which is never used except in the upper dialect; the lower dialect constantly uses: "tso-tłaka."

"ato rōnit," a form of lower dialect, which one would not expect to find in this story, for: "ate raranit." The meaning is: (good) for everything, for any purpose; and the narrator explained it as signifying: "he was good for any kind of game."

"kenīkětłsen," lit. something being torn open. The root "keł" denotes that the thing alluded to must be a flexible or soft thing. That an animal is meant does not appear until the following words "tlor ragedo," where the root "do" manifestly points to a living being, which with the "ke" of "kenīkeł" can be nothing but an animal.

"rŏrŏ'ănŏ," I have no other instance of this word, which was explained as meaning "oh! wonder!"

"kōōtsentsena kō tōlo ko-dātłtlāk," the arrow-quills ("ko tolo") have passed through (the animal's body) and being wet ("tlak") (with his blood), are on his back. The idea is to express that the arrows have been shot with such strength that they have passed through and through.

"a-zanīlo," the first person plural, for the third.

"zī ātōōt," for nothing; he may mean: gratis, without my giving anything in exchange, or without my being entitled to it; or he may mean: although I do not expect any benefit from it, since I am about to die.

"ni do-kezanī'on," he gave a message, the first person plural, for the third singular, lit. in words ("do") he confided or placed ("zani'on") something ("ke").

"se-ni-norłnih," bury me. Although he uses the present, he expects them to wait till he shall be really dead.

"an rayetātłtāne," the thing (of the living kind) which they have abandoned, *i.e.*, the carcase. The idea of "living thing" is expressed by the root "tan."

"no-reīděno," lit. he lived again; Latin: *revixit.* Similarly further: "no-reseno," I lived again.

"roĭhtor rotāltlet," etc. The narrator makes a jocular comment on the common phrase which concludes the stories, and says: the winter is going so fast that the snow is already thawing, and the water from the thawed snow is flowing into the house, so much that I can almost paddle my canoe from this place to the other bank of the river.

The story as given above was supplied jointly by Andrew Keniyo, Ambrose Tsenokoleyala, and another native from the Koyukuk River who has since died and whose name I have forgotten. These four, viz., the Bear-skin, the Canoe, the Woman-Porcupine and the Big-Raven, are good samples of the upper dialect. In a subsequent paper I hope to give examples illustrating the lower dialect.

A DEVIL CEREMONY OF THE PEASANT SINHALESE.

By Brenda Z. Seligmann.

[With Plates XXX–XXXIII.]

The usual "devil dances" of Ceylon are characterised by the wearing of masks and elaborate properties, many of which are figured by Mr. W. L. Hildburgh in his recent paper.[1] At Gonagolla, a remote jungle village in the Eastern Province, a dance of quite unusual type was seen. Like the dances in constant practice in the west and south of the island it was performed to cure sickness, but it began in broad daylight, and continued an hour or two after nightfall.



Fig. 1.

Early one morning the *gamarale,* who was also the *katandirale* or "devil-dancer" of the *chena* settlement near which we were staying, came to our camp and told us that he was going to Gonagolla, a village about four miles distant, to perform a dance there, and showed us the properties for it.[2] These are shown in Fig. 1, and consist of the following objects:—

(i) A pair of leathern leglets with bells attached to them.

(ii) A circular wooden shield, *paliha,* roughly painted with lime, the design upon it being well shown in Fig. 7.

[1] "Notes on Sinhalese Magic," *supra,* p. 148.

[2] The *gamarale* of a Sinhalese village is the headman, who is responsible for the cultivation of the village lands and generally directs the agricultural affairs of the community. Bailey defines a *chena* as "a patch of ground cleared from the forest for cultivation. The jungle is burnt down, a crop taken off, and then suffered to grow up again. It is recleared again after intervals of from five to ten years."—*Trans. Ethnol. Soc.,* N.S., vol. ii, 1863, p. 282.

(iii) A long-bladed knife, also well shown in Fig. 7, representing a sword.

(iv) A short-bladed trident called *aude.*

(v) Two sticks, which represented "all kinds of musical instruments."

(vi) Two imitation *ola* books.

The *gamarale* stated that the dance would begin at ten o'clock, but when I arrived at Gonagolla at that time it was to find that preparations had scarcely begun and were being carried on most leisurely. The dance had been arranged by one Vinakorale Apuhami, whose wife and daughter and grand-daughter had all been ill for several years, suffering, as it appeared, from chronic malaria, while the eldest woman also presented many sores of long standing. Vinakorale told me that a travelling fortune-teller (*sastarakeya*) had been consulted and had looked at the patient's hands, and that he had named the spiritual beings *devio* and *yaku,* who were responsible for the illness, and who must be propitiated in order that the patients might recover.

Vinakorale assured me that the organization of this dance had cost him a great deal of money, but he seemed to be confident that beneficial results would ensue. Besides a handsome fee for the dancer, and the provision of a certain amount of food, areca nut, sandal wood and two or three mats, six young banana plants were cut down, the white unopened leaves of which were necessary for the decoration of the structure (*samema*) or altar on which food was placed for the *devio.*

The spiritual beings invoked were Kumara Deva, whom Mr. H. Parker, late assistant director of the Irrigation Department, identifies with Kanda Swami the Katragam God, and his attendants (*piriwari*); Menik Bandara Deva; the Kadawara Yaku, of whom there are 64,000 of each sex; Riri Yaka and Riri Yakini, Sanni Yaka, Marulu Yaka, Madena Yaka and Madena Yakini, Ginigel Kumari.

The *samema,* which is shown in Fig. 2, was an elaborate structure, consisting of two stages supported on a scaffolding of sticks specially cut in the jungle. Both stages were divided into nine partitions, each a little over a foot square, the lower stage being about 3 feet from the ground, and the upper stage some 18 inches higher. The central partition of the upper stage was surmounted by a four-sided pyramid called *gedige,* made of strips of the colourless immature leaves and leaf sheaths of the banana. The *gedige* (well shown in Fig. 2) was built up round a piece of the white centre of a banana stem which had been thrust through the middle of the upper stage. A coconut inflorescence was attached to the top of this. At each corner of the upper stage of the *samema* was fixed a structure called *rupagewal,* consisting of two pieces of immature banana leaf sheath, each bent into a half-hoop and crossing each other at right angles. These are shown in Fig. 2, but in later photographs are hidden by added decoration. To the outer edge of the central partitions on each side of the upper stage two sticks some 3 feet long were fastened. These sloped outwards at about forty-five degrees, and a light horizontal stick was attached to the free ends of each pair. On each side of the *samema* a long coloured cloth was folded over the horizontal stick, and held in

position by the outer bar of the upper stage. Since the *samema* was oriented east and west, it follows that these cloths were directed to the four cardinal points. The lower stage was called the *pudenawa*, and was covered with green banana leaves, on which were laid bunches of ripe bananas and little heaps of rice and curry. The central part of the *pudenawa* was called *tatua*. The western side of the pyramid *gedige* was left open, and bananas, a young coconut, areca nuts, and flowers were put within it. *Ratmal*, the red flowers of *Ixora coccinea*, were put on the central and side decorations, and strands of immature coconut leaves were attached to the supporting posts. Bunches of bananas were placed on the upper stages and hung to the sides of the *samema*. All this is shown in Fig. 3.

The *samema* was the resting place of the *devio* and their attendants, each being or group of beings of this spiritual order being assigned a special part of the *samema*. The food in the *gedige* and the *tatua* was for Kumara Deva, the remainder of the *pudenawa* was spread with food for his attendants, who were also said to assemble in the *rupagewal*. No blood was put on the *samema*, and all food on it might and would be eaten by the villagers after the ceremony.

Separate structures called *pideniya* were built for the *yaku*; the largest of these, called *atakona pideniya*, or eight-cornered *pideniya*, was cruciform, and was prepared for Riri Yaka, and for the Kadawara Yaku of both sexes. The structure of this *pideniya* is well seen in Fig. 4, taken before the offering to the *yaku* had been placed upon it. Fig. 5 shows two other *pideniya* and another object, the *usputua* in course of construction. The triangular *pideniya* was for Riri Yakini, the rectangular *pideniya*, elevated on a tripod called *hambam pideniya*, was for Sanni Yaka, Marulu Yaka, Madena Yaka and Madena Yakini. All the *pideniya*, when finished, were decorated in the same way with the strips of immature banana sheaf and the flowers of *Ixora coccinea*. The third object resembling a *pideniya* and lying on the ground is the beginning of the *usputuwa* for Ginigel Kumari, which in its finished condition is shown in Fig. 6.

All the structures were carefully built according to very old traditional measurements, which, it was stated, still existed, being preserved in long chants.

Before describing the dance it must be mentioned that this was delayed for some time until fresh blood could be procured to mix with the rice which was offered to the *yaku* on the various *pideniya*. Some villagers had gone out early in the morning to shoot a monkey for this purpose, but had failed; at about 1.30 p.m., however, one of them borrowed a gun and soon brought back a monkey, which he had wounded severely, but which he refused to kill until the rice was cooked, as the *yaku* preferred their blood offering to be quite fresh.

Besides plain rice and curry, rice mixed with blood, popcorn, *kurakhan* cakes, and ginger were put on the *pideniya* and the *usputuwa*. Small cups were made of green banana leaves, some of which were filled with blood and water, some with coconut milk, some with turmeric and water, and some with a green fluid, and

all were placed upon the *pideniya.*[1] Finally, small portions of the liver and other solid viscera of the monkey, and pieces of banana soaked in its blood were impaled on the upright skewer-like pieces of stick shown in the photographs of the *pideniya.* The two sick women and the child came and sat down under the verandah of an empty house at the north of the dancing ground.

The *katandirale* took the long knife representing a sword (*kadua*) and censed it; then holding it and some betel leaves in his hands he walked slowly round the *samema* to the beating of a drum, stopping at the west front to recite an incantation. Again he moved slowly round, burning incense at each front of the *samema,* putting betel leaves in each partition, finally leaving the sword associated with Menik Bandara Deva on the south side of the *samema.*

A roughly made wooden arrow was laid on the west front of the lower platform of the *samema,* and a long piece of white cloth was brought to the *katandirale,* who pleated it into many folds in front, and fastened it round his waist, letting the upper end hang over his girdle. While dressing for the ceremony, the *katandirale* stood or sat on a mat so that neither this cloth nor his leglets touched the ground.[2] The *katandirale* also unbound his hair and wound a piece of white cloth round his head. While he was putting on his ceremonial dress one of the villagers made a boat-shaped vessel out of the centre of a banana stem and filled it with blood and meat, and put it on the triangular *pideniya* for Riri Yakini.

There were no women or children present except the three patients, but probably every man and lad above the age of puberty in the village had assembled to watch the proceedings. This was because of the malignant nature of all *yaku,* who gain ascendancy over women and children more easily than they do over men. However, the men took measures to protect themselves as will be seen later. The villagers declared after the ceremony that "white people must be specially guarded or else the white woman's husband would never have allowed her to approach the *pideniya,* which she did, apparently without any fear."[3]

By the time all these preparations were completed, it was three o'clock, but the delay seemed scarcely to be realised by any one but ourselves. The dance began by the *katandirale* reciting an invocation to Menik Bandara Deva, facing the south side of the *samema,* while an assistant brought a lighted torch and walked slowly round the *samema* burning incense; he did the same round all the *pideniya,* but now he held an arrow in his hand as a protection against the *yaku.*

[1] The "green fluid" was probably the juice squeezed from certain leaves, but on this point my notes are not explicit.

[2] A similar dancing cloth is called a *kangalla* by the Veddas, and is worn by some of them in their ceremonial dances.

[3] This intense fear of the *yaku* was in marked contrast to the feeling among the Veddas, with whom the *yaku* are essentially benevolent. The women and children are present at Vedda dances, and it was not at all unusual for the *yaka* of a dead man to make special enquiries about his grandchildren and show them favour.

Perhaps it will not be amiss to mention the place held by iron in the beliefs of the Sinhalese. Iron is considered a protection against all evil spirits; thus a Sinhalese gentleman told me that when he was a child his mother always put a piece of iron under his pillow, and it is a constant practice for children to be protected in this manner. On more than one occasion I have noticed an old iron blade thrust in the bark wall over the doorway of jungle huts, and, Mr. Parker informs me, women frequently wear iron bracelets as a protection against the *yaku*.

The arrow used in this dance was roughly made and had only a wooden point but it was used by the man when burning incense as a protection, for all over the world spirits are easily deceived. Later, when the *katandirale* invoked the dangerous Riri Yaka, he did not consider it safe to bluff this *yaka*, and so rejected the wooden arrow until someone had tied to it the sword of Menik Bandara Deva.

The sword was now used in quite a different sense to that in which it had been employed previously, when it represented an object traditionally associated with Menik Bandara Deva, and thus brought the dancer in sympathy with the *deva*. When used in conjunction with Riri Yaka the fact that it was a sword was forgotten, the important feature being that it was iron, though doubtless the protective influence of the iron was enhanced by lashing the blade to the shaft of an arrow. We were told at Gongolla that the *yaku* have always disliked and been afraid of iron, since one of them saw a sickle, and not approving of its shape, tried to straighten it by pressing one end against his leg, and so cut himself severely.

After reciting the invocation to Menik Bandara Deva, the *katandirale*, still facing the south front, offered betel leaves to him, holding them between his fingers and working his arms from the elbows and wrists. Then he walked slowly round the *samema* with body erect and dignified mien, moving his arms rhythmically in the manner indicated. Again he stopped at the south front and put down the betel leaves and taking the shield in his right hand and the sword in his left, exhibited them to Menik Bandara Deva, waving them in the air, and stepping lightly round the *samema* (Fig. 7). Gradually the dance became more impassioned; at times the *katandirale* swayed his body to and fro and waved the sword and shield, or twirled them round with outstretched arms; then suddenly changing the movement he would step high, with knees bent and body erect, swinging his arms, at first slowly then quicker, springing wildly to and fro, occasionally bringing his heels together, then suddenly, with great shaking of bells, bringing his body forward and salaaming as he did this, thus asking permission to dance (Fig. 8).

Once he stopped at the south front of the *samema* and patting the ground alternately with his feet and working his wrists in time he recited a charm. The swaying and the more violent jumping movements followed each other in quick succession. The salaams were repeated several times and when the *katandirale* saluted us in this way it seemed the appropriate moment to make an offering of money, which the *katandirale* immediately placed in the *gedige*. The dancing

became wilder, and about this time the *katandirale* must have become possessed, for his features assumed the rapt expression characteristic of this condition. At the south front he put down his shield and sword and took a long stick, which is especially kept for dancing. He danced for a short time with this stick (Fig. 9), then stopped at the south front and grasping the *samema* with both hands, bent forward and shook violently, his hair streaming over his face while an assistant stood behind him ready to support him lest he should fall (Fig. 10). All this time the drum sounded wildly, soon the *katandirale* raised his head and put some powdered sandal wood on a betel leaf and holding it on high, advanced to Vinakorale, and placed it on his chest as a sign of favour from Menik Bandara Deva. The *katandirale* returned to the south front of the *samema* where he again bent his head, and while his whole body quivered, he again approached Vinakorale, holding the stick with both hands outstretched. He now placed this across the chest of Vinakorale (Fig. 11) and, while the *katandirale* shifted his feet and trembled, Vinakorale spoke and pointed to the women. Then in the strained hoarse voice of the spirit the *katandirale* promised that they should be cured after seven days. He now returned to the *samema* which he again grasped, bent his head and the spirit left him.

After a short interval the *katandirale* again stood before the *samema* and beginning a chant with the words *aiboho aiboho* (salutation), he exhibited the properties one by one, the sword, the shield, the book and the sticks while a boy beside him burned incense near them. He held the two sticks in various ways and positions, at one time pretending to beat a drum, and then holding the two as though they were fiddle and bow, besides mimicking various other instruments. After this he took a pot which had been placed on the *samema* and holding it in his right hand, marched round the *samema*, halting slightly on each foot as he thrust the other forward, at the same time quickly bending his arms so as to jerk the pot out of his hand, catching it again as he straightened his arm. He stopped at the west front and danced there with the pot clasped in both hands. Then he exchanged the pot for a coconut and with it repeated the dance. Again he danced before the west front and taking some betel leaves censed them, then with feet together shuffled round the *samema*, putting betel leaves in each partition. This he repeated first with sandal wood, then with incense. Next he danced holding a rolled mat in his hand. Soon he took the rough wooden arrow, not to exhibit to the spirits as he had exhibited the other things, but as a protection against Riri Yaka to whom he was now about to offer a cock, but he immediately threw this arrow away with an expression of disgust for its blade was not iron. For a moment the spectators looked on in silent surprise, then one of the group round the *pideniya* picked up the arrow and examined it, and when the *katandirale* explained that as a protection the arrow was useless since it had no iron blade the long knife which had already done duty as the sword of Menik Bandara Deva was quickly lashed to the shaft of the arrow. The arrow was now an efficient protection, and the *katandirale*, holding it in his hand, danced round the *samema* several

times, tapping the ground with his heels and toes and holding himself stiffly so that all his movements were angular. He stopped once at the west front and called to Riri Yaka, "Come and take food and I will give you a cock."

It must here be explained that Riri Yaka is so malignant that although the *katandirale* invokes him, he is careful not to allow the *yaka* to enter his person. For should this happen he would fall to the ground, blood would flow from his mouth and he would be extremely lucky if he escaped alive. Hence the cock's life is offered instead of the dancer's; yet the cock is not killed, for even its life is protected by the bird being struck with burning torches. The cock had been placed on its side under the *pideniya* with its legs tied together; it had, however, struggled to its feet (Fig. 12), but did not attempt to move, and although very roughly treated throughout the dance, it behaved in a quiet manner which surprised me greatly, until I learnt that it was the fourth time that this particular cock had been offered to Riri Yaka. The *katandirale* continued to dance with outspread arms, bending his knees more and more until he moved forward by jerks and bounds; at last he leapt towards the cock but did not grasp it, as some one pulled it away. He retreated, waited a moment, crouched with his legs wide apart, sprang towards the cock and again failed to secure it; at the third attempt, however he seized it and holding it and the arrow in one hand, and a burning torch in the other (Fig. 13), he danced round the eight-cornered *pideniya* bending his body, swaying his arms and rapidly twirling the lighted torch. Whenever in his excited movements he happened to strike the torch against anything and extinguish it, some one in the audience was quick to re-light it for him. As he continued, his movements became less and less controlled, soon he fell back and after being supported for a moment, allowed his head to drop over the *pideniya*, still supported by one of the villagers. All now began to sing, apparently repeating a charm to prevent Riri Yaka from entering the *katandirale* while he was in this exhausted condition. He soon revived, and still holding the perfectly passive cock by its legs, danced again round the *pideniya*, his body swaying and rocking, and his long hair falling over his face, indeed his movements were so excited that he looked as though he might fall at each step. All watched him anxiously, eager to support him and help him to keep his strength to resist Riri Yaka, who was now showing his power. The *katandirale* threw resin on his torch, which as it flared up, protected him and the cock, but he had almost collapsed and was supported by two men, while, with chin thrown back, and motionless except for his lips, he muttered a charm, blowing sharply once or twice (Fig. 15). All this time the drum beat wildly. Soon the *katandirale* shivered, his bells began to tinkle, when, suddenly some resin was burned and as it blazed he leapt forward with a wild yell. Riri Yaka had not entered him. Quaking all over he held the cock's head over the *pideniya*, then two mats were brought and laid cross-wise on the ground in front of the *samema*. The *katandirale* advanced, burning resin and waving his torch; he threw some resin towards the mat, setting light to it so that it flared up as it fell. Then he flung himself on the mat and lying on his back waved his torch; this he

repeated with his head on each arm of the cross formed by the mats (Fig. 15). As he rose, the mats were moved to the next side of the *samema*, and the same performance was enacted hurriedly and excitedly at each of its four sides. This was done to show the *yaku* and *devio* the good things provided and to invite them to eat. Once again, the mats were placed cross-wise in front of the patients, and again the *katandirale* flung himself on them, waving his torch in the four directions, from which it might perhaps be inferred that the *yaku* and *devio* were reminded to remove the woman's disease as well as to take the offerings.

The *katandirale* now fell back utterly exhausted. He was supported and gently lowered on to the mats, a red cloth was laid over him and the cock was tied to his left big toe. The triangular *pideniya* for the offering for Riri Yakini was placed on his abdomen, in order to distract her attention from him; the red cloth was for the same purpose. One villager placed a torch in the outstretched hand of the *katandirale* and supported it there (Fig. 16), another man knotted a piece of areca nut in an upper corner of the cloth, and muttered charms continually as the *katandirale* lay motionless except for the regular rise and fall of his chest. During this time the *katandirale* never lost consciousness completely, for he was not possessed. Riri Yaka and Riri Yakini each in turn had endeavoured to possess him but had failed, although he could not entirely resist their influence and consequently had become very faint. After about ten minutes or a quarter of an hour the triangular *pideniya* was taken away, the cock was untied and four men raised the *katandirale* to his feet and supported him. They clasped a lighted torch and the sword in the hands of the apparently unconscious man.[1] Soon the bells on his legs tinkled faintly and successive tremors passed from his feet upwards until his knees shook and his whole body vibrated; some resin was thrown on the flame and as it flared, the *katandirale* flashed into life and leapt to the eight-cornered *pideniya* round which he danced with ecstatic expression and dignified movements. Suddenly he stopped, bent his head over the *pideniya*, his hair falling over his face and going to Vinakorale promised the recovery of his wife, daughter, and grand-daughter after seven days, and speaking not in the words of Riri Yaka and Riri Yakini, but in his own person, he assured Vinakorale that the *yaku* had been propitiated by the ceremony performed. He delivered this message, staggering to and fro waving his burning torch, then with a final mad leap and yell he sank exhausted into the arms of his supporters.

Next the 64,000 male Kadawara Yaku were invoked; one of the villagers, Hudu Apuhami by name, standing with torch in hand, droned the incantation, while several others squatting in a row took up the words and repeated them in low wailing tones, swaying their bodies rhythmically to the thud of the drum. The *katandirale*, utterly exhausted by his efforts, lay stretched on the ground and had fallen fast asleep; a man, squatting beside him, continually tied knots in his

[1] During the wild dance the sword had become unlashed from the wooden shaft of the arrow, the *katandirale* had let the wood fall to the ground, and for the rest of the ceremony the *katandirale* retained only the essential iron.

long hair while he muttered charms under his breath. The cock, now recovered from its stupor, stood peacefully under the *pideniya.*

After the incantation to the male *yaku,* a similar one was recited to the 64,000 female Kadawara *Yaku,* in which it was said, "Blood and food are prepared, come and take them."

The sun had already gone down and the light was fast fading, the western sky was aglow with delicate pinks and blues, and the trees in the foreground stood out dark yet vivid while the coconut inflorescence on the *samema* had turned to pale gold. There was a flare of resin and the droning ceased. The eight-cornered *pideniya* was removed and the square *pideniya* brought forward; the invocations to Sanni Yaka and Marulu Yaka which followed were similar to the preceding two and like them were quite uneventful; the *yaku* came, accepted their offerings and departed without attempting to show power over anyone.

By this time the *katandirale* had awakened and was ready to dance to Ginigel Kumari, the female spirit in whose honour the *usputuwa* (literally high chair) had been built. He wore cross shoulder straps of *Ixora* flowers and held the *kadua* in his left hand. Two men, who had acted as assistants throughout the ceremony, sang the invocation, while the *katandirale* slowly danced round the *usputuwa.* After a short time the dance became more energetic, his body and arms swayed more and more, till after leaping wildly, bending his head forward, and shaking his hair, he fell back into the arms of two men, and became possessed by Ginigel Kumari; the drum was now beaten furiously, soon the dancer's head fell forward, his body quaked and with a loud shout he danced wildly. The torch burning at the corner of the *samema* went out, immediately the *katandirale* fell back senseless, and was again supported. Ginigel Kumari could not see, therefore she was angry. Someone brought a lighted torch and held it by the *usputuwa*; the drum was beaten fiercely, all present repeated the invocation to her. Vinakorale looked extremely anxious, fearing the spirit might depart displeased. Some resin was thrown on the torch and with the flare the *katandirale* revived, then still supported he approached Vinakorale, and shifting from one foot to the other he put both arms on the latter's shoulders, and in the spirit's voice said he was pleased with the offerings and would cure the women within seven days. He returned to the *usputuwa,* and, amidst the furious beating of the drums, he bent his head forward and the spirit left him.

The last and, perhaps, the most impressive dance of all was to Kumara Deva. Night had now fallen and there was no moon, the torches tied to the *samema* lit up the eager faces of the audience, all intensely earnest and excited. A headman from a distant village had just arrived and he was asked to charm the fire before the dance, so that it might not burn the *katandirale* when he put his hand in it. Accordingly, the headman muttered a charm over the burning torch and blew on it sharply.

The *katandirale* began to dance before the west front; an assistant unbound his hair which fell below the waist. This time a very short preliminary dance led

to the *katandirale* becoming possessed by Kumara Deva. The headman who had charmed the fire held two torches crosswise and was again muttering some charms over them, when the *katandirale* approached. Swaying his body and tossing his head, he thrust his hands into the flames to show that they could not hurt him. Then he seized one torch in each hand and, crouching in a squatting position, leapt forward in a series of bounds, at the same time whirling the torches round and round; suddenly he changed his position and marched erect, slowly raising his knees and pointing his toes, swinging the torches in perfect time and whirling them in front, over his shoulders and behind his back with wonderful precision. Their light lit up his face, ecstatic and dignified. Without any warning his movements changed again; crouching low he leapt madly with bounding strides, whirling his torches to the wild beating of the drum. Then springing upright, he spread out his arms and quickly spun round on his toes in front of the tomtom beater. Thus the dance continued, changing from stateliness to frenzy with bewildering rapidity.

As he danced wildly round the *samema* the *katandirale* inspected the food, and at each front he threw resin on his torch, sometimes flinging it towards the ground and lowering his torch, at other times throwing a handful through the flame as high as he could reach, so that the flames burst upwards. Someone pulled one of the plaited leaf decorations off the *samema* and the *katandirale* put it in his mouth. After again burning resin at the west front, the dancer approached the women and waved his torches in front of him. Then the mats were brought and laid crosswise on the ground in front of the *samema*, and the *katandirale* lay on them as he had done before and waved his torch in the four directions. The mats were taken all round the *samema* and then in front of the patients and in a hurried manner, with body quaking, the *katandirale* repeated the performance on each side of the *samema* and in front of the women. Then, waving his torches and followed by assistants who carried the mats, he rushed into the house where the charmed thread responsible for the sickness had been buried; lying on the mats and waving the torches both on the verandah and inside the house as he had done outside, he now purified the place. He immediately rushed out again and then fell back stiffly and was supported by a couple of villagers. After a few seconds, when some resin was burned, he revived and, springing forward again, danced round the *samema*, swinging his torches in perfect time. Presently he seemed to be looking for something, for some food had been stolen from the *samema*; suddenly he crouched down and stretching out his right arm he pointed with his torch and dancing staff to the roof of the house. He remained motionless in this strained position for some moments till someone climbed on the roof and discovered two bananas. The *katandirale*, still possessed by Kumara Deva, walked round the *samema*, solemnly offering them to the onlookers. Everyone refused, knowing well that to accept would proclaim his guilt, and that should he put forward a hand the burning end of the torch would be given him instead of the fruit; should he open his mouth the flame would be thrust into it. The Deva was apparently satisfied

and placed the bananas on the *samema*, after which he showed favour by giving other bananas from the *samema* to the patients, myself and other spectators; at the same time as a special sign of favour to me he heated his hand in the torch flame and held it to my forehead.

The *katandirale* now fed the two women with curry and rice from the *samema* and bananas from the *gedige*, putting the food into their mouths with his hands, and he afterwards took the young coconut from the *gedige*, and held it to their lips for them to drink.[1] Then, going to each woman in turn, he heated a betel leaf in the torch flame and rubbed it on her face, ears and shoulders, then passed it slowly downwards over the face and body to the ground at her feet. Taking his staff he now went up to Vinakorale and promised that the women should be cured within seven days. Before leaving, the Deva took a banana from the *samema* and tossed it in the air; this was scrambled for eagerly, as it was considered very lucky. Some resin was burned, the Deva departed from the *katandirale*, and as he fell back the ceremony ended.

The figures illustrating this communication are from photographs taken by Dr. C. G. Seligmann. The last (Fig. 17) was taken late in the afternoon, and it was necessary to paint in the greater part of the detail in order to produce a print fit for reproduction.

For the following note on the Devil Ceremonies of the Kandyan Sinhalese and those of the North Central Province I am indebted to Mr. H. Parker.

The ceremony " described does not resemble those of the North West Province or the Western Coast."

" No offerings are made by the North West Province Kandians to Sanni Yaka, and I think there are none to Maenik Bandera by the low-country Sinhalese. Skanda is worshipped everywhere as one of the four guardian deities of Ceylon."

" The Kandians, so far as I am aware, do not make offerings to a miscellaneous company of demons in this way. Among them the illness would be definitely attributed to one demon, to whom alone the offerings would be presented. When this is not effective the attack is sometimes found to be due to planetary influences, for which a different ceremony is then performed. But it is quite unusual for more than one ceremony to be tried."

As regards the invocation and propitiation of *Riri Yaka* no doubt these " vary in different parts of the country."

" Among the Sinhalese a special part of the ceremony is the impersonation of a dead man by the dancer who conducts the ceremony, who is called the Aedura. He is often carried out to a burial ground like a corpse, and a sham grave mound being made is deposited beside it, and offerings are then made. The demon being thus led to believe that the afflicted person is dead, will cease to trouble him or her any longer. Some claim that the *Riri Yaka* is a special demon of Ceylon."

[1] Although the child was present at the beginning of the ceremony she was not noticed later.



FIG. 2.—SAMEMA IN COURSE OF CONSTRUCTION.



FIG. 3.—FINISHED SAMEMA.



FIG. 4.—FINISHED PIDENIYA.



FIG. 5.—PIDENIYA IN COURSE OF CONSTRUCTION.

A DEVIL CEREMONY OF THE PEASANT SINHALESE.

Journal of the Royal Anthropological Institute, Vol. XXXVIII, 1908, Plate XXX.



FIG. 6.—USPUTUWA.



FIG. 7.—THE KATANDIRALE DANCING WITH SWORD AND SHIELD OF MENIK BANDARA DEVA.



FIG. 8.—THE KATANDIRALE SALAAMS TO THE DRUM.



FIG. 9.—THE KATANDIRALE DANCES WITH STICK.

A DEVIL CEREMONY OF THE PEASANT SINHALESE.

Journal of the Royal Anthropological Institute, Vol. XXXVIII, 1908, Plate XXXI.



FIG. 10.—THE KATANDIRALE IN ECSTASY BEFORE THE SAMEMA.



FIG. 11.—THE KATANDIRALE PROPHESIES THE RECOVERY OF THE PATIENTS.



FIG. 12.—COCK AND ATAKONA PIDENIYA.



FIG. 13.—THE KATANDIRALE DANCES ROUND THE ATAKONA PIDENIYA.

A DEVIL CEREMONY OF THE PEASANT SINHALESE.

Journal of the Royal Anthropological Institute, Vol. XXXVIII, 1908, Plate XXXII.

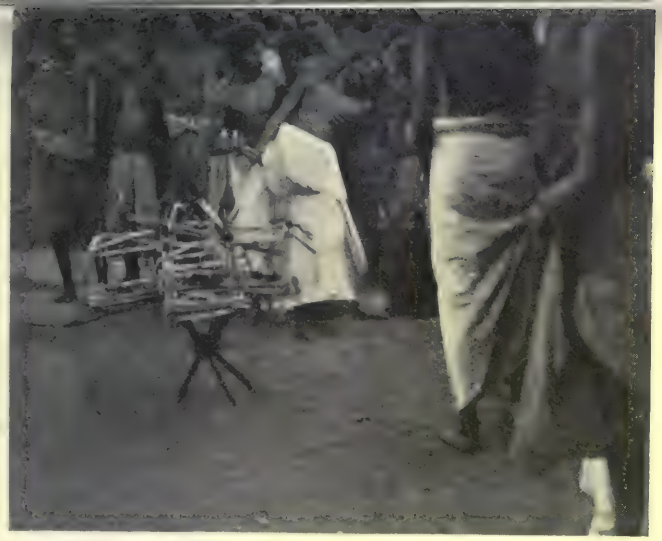


FIG. 14.—THE KATANDIRALE FALLS BACK EXHAUSTED FROM THE ATTACKS OF RIRI YAKA.



FIG. 15.—THE KATANDIRALE REPEATS A CHARM TO PROTECT HIMSELF FROM RIRI YAKA.



FIG. 16.—THE KATANDIRALE LIES ON CROSSED MATS.



FIG. 17.—THE KATANDIRALE PRONE ON MAT, WITH THE PIDENIYA OF RIRI YAKINI UPON HIS BODY.

A DEVIL CEREMONY OF THE PEASANT SINHALESE.

Journal of the Royal Anthropological Institute, Vol. XXXVIII, 1908, Plate XXXIII.

"Maenik Bandara is a local demon of the North West Province, who is said to have been originally an Indian Prince; his emblem is a silver sword."

"The Kadawaras are a very puzzling group of demons. I never heard that there are so many as 67,000 of them. Some say that there is only one; others seven: others twelve; others sixty-seven. They are an importation from India, where the original demon is said to have been created by the wife of the god Siva. In Ceylon he (or they) is treated as a demon."

"I have not seen or heard of an *usputuwa* among the Sinhalese, and the expression *samema* is also not used by them, I think, though a somewhat similar frame is erected as an altar. The *pideniya* is commonly a simple portable rectangular frame of plantain stems, with a very slight decoration of red flowers (*ratmal*) and young coconut leaves."

"It is difficult to give an exact short descriptive definition of the Sinhalese idea of a *yaka*, as there are several classes of beings termed *yakas*. For instance, all the *bandaras* are ranked as *yakas*. There are also many other such and in addition there are numberless unnamed *yakas* who are quite local, and are scattered over the whole country; there are also spirits of deceased persons who become local *yakas*, though greatly inferior in rank to the *bandaras*, who themselves occupy a high position."

"All the *yakas* of whatever class are under the control of Wessamuni, their king."

"The *yakas* are all classed together as hurtful; but many of them also have protective functions, especially when provided with suitable offerings."

"The greater *deviyo* or *devas* are Indian gods, such as Vishnu, Skanda, Ganesa, and Ayiyanar. These are the *deviyo* of a colourless sort, the inhabitants of the Dev-lowa, the world of the Devas. These are chiefly human spirits, who are sent to this Elysium as a reward for meritorious acts. Sakraya (Indra) rules over them, but he is rarely mentioned by the villagers. Sometimes *deviyo* appear to people in dreams, but I do not remember hearing of an instance of their being seen during the day-time. The *deviyo* usually act as protectors of mankind. Broadly therefore it may be said that according to Sinhalese ideas the *yakas* are maleficent human or superhuman spirits, and the ordinary *deviyo* are beneficent superhuman or human spirits."

I am indebted to Mr. Hildburgh for drawing my attention to the references, in Gooneratne's paper "On Demonology and Witchcraft in Ceylon" (*Journal of the Ceylon Branch Roy. As. Soc.*, 1865–66), to some of the *yaku* mentioned in this paper, but the difference between the beliefs of the peasants of the Eastern Province and the low country Sinhalese, of whom Gooneratne wrote, is generally so great that I have not attempted to indicate even fairly obvious agreements.

ON SOME MEGALITHIC REMAINS IN THE NEIGHBOURHOOD OF AUTUN (SÂONE ET LOÎRE), FRANCE, WITH SOME OBSERVATIONS ON LINES OF STANDING STONES IN OTHER PLACES.

By A. L. Lewis.

While attending the third Congrès Préhistorique de France I inspected the remains of three tomb-chambers, on the way from Autun to the Camp of Chassey. The first is on a hill, about 1 kilometre south from the village of La Rochepot; the capstone, 10 to 11 feet long, 7 to 8 feet wide, and 1 to 2 feet thick, rests practically flat on the ground, one supporting stone, and possibly others, lying flat beneath it.

The second is on the same hill as the first. Its capstone has disappeared. The north-western end is formed by a stone about 10 feet long and 5 to 6 feet high; two stones, between 3 and 4 feet high, form the south-western side; and one stone, leaning very much inward, and about 9 feet long, constitutes the north-eastern side of a chamber 7 feet wide. Other stones lying flat at the south-eastern end may have closed it, or may be the last remains of a continuation of, or entrance to, it. These stones are surrounded by the remains of a cairn still 3 or 4 feet high in places, and there were indications that another small chamber or a cist might be found adjoining the one just described.

The third monument is on the north point of Mont Juliard, near Flagny, and 1 kilometre or so south-west from the one last described. Its axis is from five to ten degrees north of west to south of east. The west end is formed by one stone, 6 feet long and 3 feet high; the north side by two stones, 3 to 4 feet high, and 6 and 10 feet long respectively, the first and most westerly having a hole in it; the south side is composed of three stones, giving respectively about 3, 8, and 2 feet of wall surface lengthwise, and standing from 3 to 4 feet high. The ground inside is covered with fragments of stone, but whether these are the remains of the capstones, or of an end, or of a prolongation of the allée couverte, I cannot say.

The dolmen at Borgy mentioned on the programme of the Congress, was not visited for want of time, but it is not now, I think, in its original condition. There are said to be several similar remains round about, but some difficult to find, and all more or less destroyed. They, including those just described, have all been explored, and the results recorded in the proceedings of the local Societies, and some of the objects found are in the local museums, but I am not aware that they present any special features. These remains are all in the department of the Côte d'Or.

There are also many natural formations of rock which have been considered

by some to be artificial; this has caused M. Ernest Chantre to raise a protest against the "mania of certain archæologists for seeing a megalithic monument in every rock of a more or less picturesque aspect, and in every stone to which a legend is attached." (Congress of Montauban, 1902.)

The most important megalithic structure in all the country round Autun was —I regret to have to say "was"—at St. Pantaléon, 6 kilometres north of Autun, at a place called le Champ de la Justice, where also are the remains of a fortified camp, as some say, or as others say, of seven tumuli, connected at the base; some of these have been explored by M. Arnon and others, and have produced cinders, pottery, flints, and bones.

The monument in question is said to have been formed of three rows of menhirs or standing stones, extending over a space about 200 metres long, and 15 to 20 metres wide. I myself am inclined to think that the so-called length may have been the width of the ground covered, and that the lines extended considerably north and south of it. Of these menhirs, according to the excursion circular of the Congress, seven only are now standing, of which I saw five, namely, a group of three (Fig. 1), and two standing singly; they are buried in a thick hedge, which runs about north and south by compass.



Photo by L. N. and L. C. Lewis

FIG. 1.—MENHIRS NEAR AUTUN.

This group of menhirs was made known for the first time by M. J. Rigollot, of Autun, in 1882: it then comprised thirty stones, which were thrown down and buried in the ground. M. Rigollot, thinking that they were on Communal property, obtained a grant of 300 francs from the General Council of the Department of the Sâone et Loîre, dug the stones up, and set them upright; but an objectionable person who claimed to be the proprietor of the field, entered upon a number of legal proceedings in which I suppose he succeeded. Attempts were made to buy him out, but without success, as he would not sell less than the whole field, and that only at an exorbitant price; and finally he threw down and reburied the stones,

soon after which he happily died and was presumably buried himself. Negotiations for purchase might perhaps have been re-opened with his successors in title, but M. G. de Mortillet, having inspected the site in 1892, reported that, inasmuch as the stones had twice been thrown down and buried, there could be no certainty of their being a third time set up in their original places, and all ideas of purchase or restoration were thereupon abandoned.

At one time there were at least thirty-two stones on this site, and, as lately as 1884, M. Ernest Chantre speaks of thirty; he says they are of granite, and that no other granite is found within 8 kilometres, but that these are certainly menhirs brought that distance by the hands of men, and not erratic blocks transported by quaternary glaciers.

M. Chantre says the average height of the stones is 1½ metre, and their average cubic content 2 metres; the largest, which I measured roughly, is about 7½ feet above ground, and 5 feet broad and thick. As M. Chantre has said, "We are then in the presence of an alignment, like those of Carnac, round which, at Saint Pantaléon at least, the neolithic populations congregated; in all the neighbouring fields, for about two hectares round the menhirs, are collected in abundance polishers, polished axes in hard stones, and barbed arrows; and flint flakes chipped into knives and scrapers by thousands; the presence of this monument in the middle of an important neolithic station augments the interest which it excites itself."[1]

Since M. Chantre pronounced these remains to have been of the same class as those of Carnac, it may be worth while, in conclusion, to consider what similarity or relation, if any, lines of stones in various parts of the world bear one to another. Those at and around Carnac in Brittany consist of four principal groups; those of Erdeven, le Maenec, Kermario, and Kerlescant, the last three being near together, and extending over a mile and a half of country, and the first, two miles and a half away from the others, being nearly a mile in length. There are also some smaller lines, but it is impossible to go into details on the present occasion; the general plan of the four large groups appears to have been eleven or thirteen lines of upright stones forming avenues with large enclosures of stones at the west ends of those of Kerlescant and le Maenec. It has been suggested that the four great monuments were united by stones now destroyed into one structure eight miles or more long, winding about, and representing a serpent, the width of which varied from 200 to 300 feet; I am, however, inclined to think that the Erdeven lines certainly, and the others probably, were always separate monuments; but what was their object or purpose? Were they serpent temples, or solar temples or observatories, or merely sepulchral or other memorials? Why, also, were such immense numbers of stones used, where a comparatively small number would, so far as we can judge, have answered any probable purpose equally well?

[1] E. Chantre, "Les Menhirs du Champ de la Justice près Autun," in *Bull. de la Soc. de l'Anth. de Lyon*, vol. iv (1885), p. 194.

There is, perhaps, no conclusive evidence as to any of these points, so we pass from France to Palestine, to the Canaanite "high place" recently discovered at Gezer, and we find it consists of a single line of menhirs, originally ten in number, running from N. to S. (the tallest 10 feet high being at the south end), not very different from many in Gaul or Britain, but with the addition of a stone with a square hole, which is supposed to have been a socket for a wooden tree or image. The remains of children were found buried here, and it is thought to have been a place of sacrifice and worship of some kind.

Once more we change the scene—to India—where among the Khasi Hill tribes we find single lines of stones, 3, 5, 7, and sometimes even 9 or 11 in number, with a pair of altar-like dolmens in front of them. Nothing could apparently be more suitable for sacrifice or worship, but nothing in the way of appearance could be more misleading; for, as Colonel Godwin Austen tells us, in the first volume of our Journal, these stones are neither sacrificial nor sepulchral, but are erected in memory of some deceased member of the tribe, whose spirit is supposed to have conferred benefits upon it; the menhirs, always uneven in number, are however supposed to represent the male element, and the two dolmens, the female element; they do not face any particular point of the compass. If the spirit continued to benefit the tribe more stones might be added to its memorial, and it may be that the great numbers of lines and stones at Carnac were also added one to another to increase the glory of the dead, or of the living, or of both, and for no other purpose.

Very different from these are the rows of stones in the Deccan, figured and described by Colonel Forbes Leslie in his *Early Races of Scotland*, Vol. ii, p. 464, and Plate LX. These consisted of a line of three stones, about 4 feet high only standing in front of two rows, each of thirteen unshaped stones, those in each row being as close to one another as possible: the tallest were in the middle, those at the ends not being more than a foot or two in height. These lines faced to the east and had apparently been recently used, but the dolmen-like structures at the back were old and neglected, and did not seem to belong to them; the standing stones were whitewashed, and each had a large spot of red paint, with black in the middle, probably representing a spot of blood. Colonel Forbes Leslie believed that a cock had been sacrificed on the three stones lying in front of the line, which, unlike the others, were not fixed in the ground. Here we find rites and ceremonies taking place in front of the first line of stones, and, if these were extended as far back as those of Carnac, those observances would still take place in the same position. At Carnac the largest stones are at the west end of the lines, where also are the great enclosures; and, although the lesson of the Khasi monuments is that we must not be too confident in deducing a similarity of use from a likeness in form, we cannot help speculating on the probability that the west fronts of the Carnac lines were used in very much the same manner as these little Indian structures, though perhaps, with local variations, of which astronomical observation may have been one. Small circles of small stones observed in the Deccan by Colonel Forbes Leslie seemed to him to have been used in the same way as the lines of stones. Further

to the east the Angami of Assam set up stones as memorials of village feasts given by wealthy Naga.[1]

In our own country we have a variety of lines of stones, such as the "stone rows" of Dartmoor, very numerous there, but practically unknown elsewhere, and quite as mysterious as regards their use or object as those in France, though in a different way, for the stones composing them are most frequently quite small, and too close together to form an avenue; some are only single rows, some are double, and some have more than two lines; there are more than forty of them on Dartmoor, and they differ in orientation; it frequently happens that they have a circle at one end and a cairn at the other. The "rows" at Merivale are not quite typical examples, but look as though they might have had a more definite purpose than some of the others, and there are also appearances of proportionate measurement about them, which are not easy to detect in the other rows[2]; the stones composing them are small and close together.

We have again at Avebury grand double rows leading up to the great circle, but these were proper avenues of approach, and it is not necessary to assume any other purpose for them, though the direction in which they ran may have had a meaning or an object, astronomical or otherwise. At Stanton Drew too there were some short avenues, to which the same observations may apply.

The Sarsen Stones in Berkshire (which were the subject of my first archæological paper, written forty years ago this year),[3] though believed to be the remains of a natural deposit, seem to have been arranged or re-arranged artificially, and look like a miniature Carnac, but they do not resemble the Dartmoor "rows" any more than the latter resemble those of Brittany.

At Shap in Westmorland there was a double line or avenue of large stones, now almost destroyed; it went northward for a mile or more from a circle, part of which still remains by the side of the railway, to make which the other part was unnecessarily destroyed. A line of fallen stones is said to extend for 112 yards N.N.E. from a triple concentric circle of small stones at Crosby Ravensworth, Westmorland. There are also lines of small numbers of menhirs at Boroughbridge in Yorkshire, in the island of Arran, and up the west coast of Scotland, which though now consisting of but very few stones, may originally have comprised more; and finally there are the lines attached to the circle at Callernish in the Island of Lewis, one line each to the east, south, and west, and two to the north, forming a kind of cross, whereof the highest stone, in the middle of the circle, is the central point. Of these the southern line is said to direct the eye over the central stone to the pole star, and Sir Norman Lockyer finds that the northern lines indicate the point where Capella rose in 1720 B.C.[4] In Caithness there are groups of

[1] *Census of India*, 1901, vol. i, Ethnog. Appendices, p. 210.

[2] "Ancient Measures in Prehistoric Monuments," *Journ. Anthrop. Inst.*, vol. xxvii, p. 200.

[3] *Congress of Prehistoric Archæology*, Norwich, 1868, Proceedings, p. 37.

[4] *Nature*, Jan. 16, 1908.

stone rows radiating from cairns, and in County Clare, Ireland, there is a line of nine menhirs N.N.E. to S.S.W.

All the cases I have mentioned are as a general rule classed together as alignments, similar in kind and in purpose, but on examination we see that they present great varieties of both, and striking local differences.

With regard to dolmens; most of them were sepulchral, and, except in the matter of size, a greater uniformity prevails amongst them, because, in almost every part of the world, when a dead body has had to be disposed of, a stone box, large or small, has been found to be a convenient receptacle for it. But even amongst dolmens there are local varieties; some in Ulster differ from those in other parts of Ireland, and those of Holland are not like the Irish, British, or French monuments. There are also both in India and in Britain, and perhaps elsewhere, dolmens that were not tombs, but open shrines, never covered nor intended to be covered.

Circles of one kind and another are also found nearly all over the world, and nothing in fact would be more natural, when a cist or dolmen had been covered by a mound, than to surround that mound with a ring of stones, either as an ornamental boundary or as a more useful retaining wall, and such circles are almost as common and universal as tumuli themselves; but many of the circles we find in Britain are not of this description, nor for sepulchral purposes, and there are considerable local differences. There are round Inverness, and round Aberdeen, numerous circles, which, though primarily sepulchral, differ widely from all others; and what is still more surprising, those round Aberdeen differ entirely from those round Inverness, and there are indications of a third type situated between the two and differing from both.

I think that I may fairly claim to have been the first to bring out clearly these marked and most important differences between the circles round Inverness on the one hand, and round Aberdeen on the other, and those of the rest of the world: for, although other observers have noticed those differences it has been in a rather casual way, and without appreciating the full significance of them. Dr. Anderson, for instance,[1] regarding all the circles as nothing but burial places, has devoted his attention rather to attempting to date or classify the various forms of tombs by their contents, and in doing so quite missed the point of greatest importance, the existence, namely, of so many circles of two such special types, each in such narrow limits. Dr. Anderson's opinion is that the neolithic people buried their dead in chambered cairns, as in Caithness and elsewhere; that the early bronze folk put a circle round their cairns, as in the Inverness district; that the later bronze people made the circle the principal feature, and, instead of putting it round a large cairn and chamber, put only a small cist and mound in the middle of it, as in the Aberdeen district; and that finally there was no indication of burial at all, but only a circle of stones, as at Brogar and Stenness. This would

[1] Rhind Lectures, 1882, reprinted as "Scotland in Pagan times (Bronze and Stone Ages)," 1886.

be a very plausible theory, if only the circles of different types were mixed together all over the country, but they are not; those with "recumbent" stones, of which there have been sixty or more, are found nowhere in the world except in the country round Aberdeen; and those with the great chambered cairns in the middle are not to be found very far from Inverness, though there are many of them in the districts round that city. If therefore we were to adopt Dr. Anderson's view we should have to suppose that a neolithic tribe began burying in chambered cairns in the north or west of Scotland; that in the beginning of the bronze age it became confined to the district round Inverness, and thereupon began building cairns of a somewhat different kind with circles of large stones round them; that later in the bronze period it migrated or was driven out of the country round Inverness into that round Aberdeen, and forthwith changed its style of burial place to a circle with a recumbent stone and small cist; all which seems very unlikely. The more reasonable view appears to me to be that the circles round Aberdeen and Inverness respectively were practically contemporary with each other, and with those of the more ordinary type in other parts of the country, and that the differences, marked as they are, were a purely and strictly local matter.

On looking at the geographical position it would only be natural to suppose that the type peculiar to the Aberdeen district had been imported from Scandinavia, but Professor Montelius, whom I had the pleasure of meeting at Autun, informed me that it was quite unknown there; he also told me that the statement that there was, somewhere in Sweden, a circle resembling Stonehenge was entirely incorrect, that there were indeed somewhere two stones which might have supported a third, but that there was no evidence that they had ever done so. The usual course has long been to group all circles and all trilithic structures (even the remains of Roman oil presses) under one common heading, "just like Stonehenge"; but Stonehenge, by reason of its transverse stones and carefully constructed tenons and sockets to keep them in place, is absolutely unique, no mere local type but a species complete by itself; occasionally we hear of something exactly like it in some out-of-the-way place, but when we get full details we find it very different; the celebrated Tongan trilithon is a good instance of this.

The general tendency of writers on this subject has been to dwell on vague general resemblances and to ignore important differences, possibly because they had never studied them, and it has been suggested that all the rude stone monuments, from India to Orkney and Scandinavia, were the work of one race, or perhaps of a race of circle builders coming from one source, and a race of dolmen builders coming from another. Long as the way is between those points there are yet many rude stone monuments outside it, in the Pacific islands, in northern Asia, in Japan, in America, in West Africa, and it is even said in Australia, and this fact and the differences of form and purpose, which I have been pointing out, seem to go far to support the view, that as a whole, rude stone monuments are not so much the product of any one race as of a phase of culture which many races have passed

through. I say "as a whole" because there are occasionally such resemblances of form and such community of custom and tradition, even in connection with the monuments themselves, as do strongly suggest some affinity between the builders in those particular instances, just as community of language indicates contact of some kind, but not of necessity anything more.

SOME ASPECTS OF SPIRIT WORSHIP AMONGST THE MILANO OF SARAWAK.

By A. E. Lawrence, Assistant Resident of Mukah, Sarawak, and John Hewitt, B.A., Curator of Sarawak Museum.

[With Plate XXXIV.]

General Remarks on Milano.

The Milano of Sarawak are a tribe of people now occupying the coastal regions of North-West Borneo, from the Rejang delta on the south-west up to the Baram mouth on the north-east. On the whole they are a fairly pure race, very distinct from the neighbouring Sea Dayaks or Malays, though the northern Milano have to a certain extent mixed with other tribes. Their language is very widely different from Malay, but has many words in common with the various languages of the more aboriginal races of the archipelago. Unlike other natives of Borneo, they have a settled industry—the working of sago, which, excluding the sea fishing common to all natives living on the coast, constitutes their only occupation.

It is not certain how long these Milano have occupied the coastal regions: there are traditions stating that they came from the interior, but this gives us no sure indication of the date when they left it: however, it seems probable that this must have been several centuries ago, and, indeed, their tradition places the date of their establishment on the coast before the time of the conversion of Brunei to Islam, which occurred centuries ago. For a long time they have had relations with Brunei as their governing power. From Brunei was introduced a certain civilization—*e.g.*, in clothing—but this does not appear to have appreciably modified their notions of religion and morality, excepting within recent times, when the Islamism of Brunei has succeeded in grafting itself on to the old religion, which it is very slowly supplanting.

Notions of Spirits and Ghosts.

Very characteristic of the Milano is their intense belief in a world of spirits, which makes them refer all the events of their lives to the agency of these spirits. For all the ills of mankind malevolent spirits are directly responsible, though, on the other hand, they do not usually consider good fortune to be the gift of the gods, as if the good things of life were man's normal lot. These numerous spirits are quite distinct from the souls of the departed, which latter, however, now roam

harmlessly in the neighbourhood of their former homes. In accordance with his religious theory, the Milano's methods of retrieving his fallen fortunes or of healing the sick is directed towards the appeasing of the offending spirit. In treating the sickness, therefore, there is no need whatever to administer medicines, the treatment simply being the pacification of the spirit by offerings and by injunctions offered through the medium of pith images, shortly to be described. It will be seen, in fact, that their method of healing is but a form of the world-wide faith cure and that to the great healer, Dame Nature, the Milano patient owes his recovery after the ministrations of the witch doctor. We ought to mention, however, that simple plant remedies are used to some extent by those people who have come under the influence of Islam, and the use of these is gradually spreading.

The whole system of communication between men and spirits (not including the souls of the dead) for the purpose of recovery from sickness, prayer for long life, riches, children, or other good things, or for bringing misfortunes upon an enemy, is known as "Bayoh": the person who acts as medicine man or witch doctor is the "orang bayoh."

The Bayoh Man.

He is supposed to be constantly in friendly intercourse with the spirits, and not unusually abuses his privilege by threatening to bring about illness or death unless some unfortunate layman hands over money or coveted goods. The Bayoh man—sometimes women hold this office—does not neglect to impose on the credulity of his people by methods not strictly spiritual. Frequently he is a conjurer, and, whilst addressing some spirit for money or tobacco, will suddenly produce it from his person, or from some unexpected place in the room.

Communication with the Spirits.

As just mentioned, communication between men and spirits is effected by means of images cut in sago pith, known to Mukah Milano as "Dakans," and to the Oya people as "Belum": these images are supposed to be material likenesses of the spirits they represent. When a person falls sick, the mode of procedure is as follows: a medicine man (orang bayoh) is called in to diagnose, and he decides which spirit (antu) must be considered to be responsible. Then he returns home, procures a log of sago palm, and the next day appears at the patient's house with a dakan representing the antu. Then, sitting down by the patient, he begins to beat a drum, not loudly, but in a peculiar way that cannot be mistaken, reciting a monotonous chant in a semi-obsolete language the while: thus calling on the spirit to enter his image and beseeching him to stop the sickness, he now spits on with sireh, which marks the end of his incantation, and then he pours water over the dakan, letting it trickle from the image over the affected part of the patient. During this time, the patient himself does nothing whatever, but just awaits the result of the witch doctor's efforts to cast out devils. After this, the

image is taken to the jungle or hung up on a tree in the air, or placed in the river according as the spirit's real home is jungle, air, or water. Such a ceremony is known as "Bayoh Sukat." In case the patient does not improve in health, another Bayoh man may be called in, who goes through quite the same ceremony, using a different spirit, which, however, would probably be allied to the former one. But if the patient becomes seriously ill, a more important ceremony, known as the Berayun, is resorted to. Sometimes this Bayoh ceremony is used when any thing special is being asked of the spirits, as for instance a child by a woman. The "Bayoh Sukat" is carried on in private, but the Berayun (Payun as the Milano call it) is as public as it can possibly be made.

The Berayun Ceremony.

The Berayun is the most important of all Bayoh ceremonies, and it is only performed in extreme cases: such persons as are really seriously ill or those ardently desiring some great benefit would alone turn to this, their last hope. In the Berayun ceremony the spirits approached are few, in fact only the most powerful of the numerous deities of our list. We have never yet come across a Berayun ceremony held for the purpose of obtaining a benefit, but have been assured by Bayoh people that they sometimes do occur, although very rarely.

For a description of the Berayun ceremony we are quoting Mr. W. M. Crocker (*Sarawak Gazette*, Nos. 120 and 121).

"Should the sickness still continue, then the last means is resorted to—that is the 'Brayune.' A sorcerer is again called in; he or she is supposed to have power of invoking the good spirit against the bad, and of, in fact, exorcising all kinds of sickness. Should they fail, there is no help for the patient. This sometimes lasts for seven or eight days, during which time their neighbours' sons and daughters all meet, dressed in their fine clothes, and feasting goes on as well as a great deal of flirtation. I visited one of these ceremonies some time ago, out of curiosity. On entering the house, I found crowds of people assembled, a seat of honour being placed for me in the middle of the room near the centre of operations. This same seat was an absurd representation of a Chinese dragon with a seat on his back, having also horns, and scales painted all the colours of the rainbow; he was represented as standing on the back of a skate, the whole being a masterpiece of carving. It was afterwards given to me." (This is nothing more nor less than a large carving of the dakan, "Naga Terbang Bau Pari," described further on.)

"The room itself was decorated with parti-coloured cloths, a swing composed of rattans hung across the room to which were attached several small bells, and flowers of the beautiful areca palm. In the background a large band of players on drums and tomtoms kept up the life of the entertainment. The wizard got upon the swing, which he commenced vibrating slowly, keeping time to the music. Presently he commenced swaying his body in every possible posture, increasing the time and tinkling the bells. Around his person floated two loose silk scarfs, his head being decorated with a gold crown and a gaudy red silk handkerchief.

The music increased in noise and time until he fell from the swing, apparently insensible, but still struggling with the evil spirit over which he was trying to gain the mastery.

"A woman afterwards got up. She commenced singing in a low, monotonous half wail, very wild, weird, and musical. She was entreating the evil spirits to be merciful. She then commenced an imitation of paddling, and was supposed to travel into the next world and converse with the spirits. By and by her appeals became more violent: she got on the swing and worked herself into such a frenzy that she had to be removed by force. Meanwhile, the sick person was lying in a corner of the room, being disturbed continually by the operators, who waved the flower of the areca palm over him in a wild and witch-like manner."

At a Berayun which one of us had the opportunity of attending, an old lady was being treated for severe dysentery. The dakan employed was Belalangan sian pepugong, which is supposed to be very powerful. It was enclosed in an elaborately carved model house 4 or 5 feet square. The room was decorated with coloured cloths, the flowers of the areca palm and leaves split and plaited into fantastic shapes, mostly representations of birds. The swing was, as is always the case, a single long rattan of the kind called sĕga (*Calamus optimus*), from the end of which a ladder made of plaited leaves has to be brought down into connection with the receptacle (model house or boat) of the dakan. This rattan serves as a sort of bridge, by means of which the spirit, after being called from his dwelling place, approaches the dakan.

One Bayoh, a man in this case, was conducting the ceremony, but he was not the only person who got upon the swing. It is the usual custom that anyone who knows how, and feels so disposed, can mount the swing and go through the performance.

Before the swinging commenced, the chief Bayoh man took yellow-dyed rice, and scattered it three times towards each of the four walls of the room (*i.e.*, three times towards each end of the rattan swing, and three times each way across it), chanting an incantation the while and waving an areca flower. Whenever, during the evening, the swing did not happen to be occupied, an areca flower was at once hung across the middle of it.

The procedure of those who mounted the swing was much the same as in the preceding account, except that every one of them, besides swaying the body, at the same time recited almost in a monotone an incantation in the old language, addressed to the spirit, begging him to come down and take the sickness out of the patient's body. After recovering from the stupor or frenzy, each performer would go over and see the patient, muttering incantations over her, sprinkling yellow rice and waving an areca flower.

The finish of the whole thing was that on the last night the patient herself was supported and swung on the rattan, and finally, after the conductor of ceremonies had also had a swing and recovered from his resulting trance, the desired spirit was pronounced to be present in the dakan receptacle, having come

along the rattan and down the ladder of leaves; then both patient and doctor got inside it.

While there, the Bayoh man spat sireh on to the image (dakan) and poured water over it, sprinkling the drops over his patient's body and muttering his incantations to the spirit meanwhile. No swinging took place after that. Early next morning the dakan in its receptacle was taken from the patient's house with full musical honours, and tied up in a side stream not far away, where it was left to rot. With the dakan were placed several areca flowers, padi prepared in a certain way, and yellow rice. As the dakan leaves the house, so does the troubling spirit leave his victim's body in peace.

Sickness Boats and Houses.

In the Berayun ceremony it is customary to provide the dakans used with special receptacles, often in the form of a house, but in the case of Iang spirits it is a model boat of sago pith manned with a pith crew and armed with cannon made of the same material. The boat is decorated with flags; inside is a leaf tray containing food.

The whole, with the contained dakan, is floated down the river. If the spirit be a Gun spirit, the dakan in its house is consigned to the jungle. In case of epidemic sickness, sometimes a whole village will club together to make a very large and elaborate sickness boat. Such a one was made at Oya a few years ago: it must have been at least 25 feet long, and as it was towed slowly down to sea along with its crew of images, the whole population of the village escorted it along with full musical honours.

Familiar Spirits.

Each Bayoh man has a familiar spirit, whom he invokes in all his incantations and by whom he effects communication with the spirits represented by the various dakans. As a rule the different Bayoh men have different familiar spirits, who vary in importance and potency, and, accordingly, Bayoh men vary in power. For minor cases a Bayoh man whose familiar spirit is not particularly powerful will suffice, but for a serious case the most powerful spirit is considered necessary, and the owner of this spirit used to demand a correspondingly high fee; indeed, before the time of the English Rajahs in Sarawak, the Bayoh men extorted very excessive fees in brass guns, gold, etc., from their patients.[1]

Enchanted Dakans.

Prior to the incantation ceremony the dakan is not an object of fear to the natives, but after the incantation so much are they feared that an ordinary Milano would never afterwards even touch them, fearing, in fact, that the sickness for which the dakan was made would be inflicted on the individual who interfered with it;

[1] *Cf.* Ling Roth, *Natives of Sarawak*, vol. i, p. 285, note 27.

they apparently imagine that the spirit which brought about the sickness now resides in the dakan. The Bayoh people, on the other hand, have no such scruple, and handle the images with impunity.

The Spirits and Morality.

This world of spirits by which the Milano are surrounded appears to dispense its favours or ills quite irrespective of the morality of the unfortunate object of their attentions. The spirits are always amusing themselves by annoying some mortal, and his ill luck is not attributed to any "sin" of which he may be suspected, nor indeed do the Milano consider that "wicked" actions are ever punished in this world or the next.

All the dakan spirits are malevolent, but one or two can also confer benefits. For example, a woman wanting a child, or a man desiring wealth, might undergo a Berayun ceremony, asking their desires of a benevolent spirit. But it is noteworthy that the spirit in conferring favours on a particular person does it at the expense of some other person; if riches are granted, it means that some other person at the same time becomes poor. The most powerful spirit of all, especially for good, is To iang.

The Three Classes of Spirits.

The spirits which thus trouble mankind are numerous, at the present day being eighty or more; they fall into three classes, according to the places of abode of these spirits, viz., the water spirits of the Iang class, the air spirits of the Langit class, and the jungle spirits of the Gun class. It is impossible to state in some cases by what methods of reasoning the particular *antu* hereafter described were associated with a particular disease, but in many cases a fairly reasonable connection is apparent. For instance, the Iang spirits of the water are always held responsible for dysentery, and that is just what might be expected from the fact that when out fishing the Milano invariably eat raw fish and other uncooked food. Cramp, too, is often attributed to a sea spirit.

The Langit spirits again are the cause of headache, sunstroke and fever, such as one may easily acquire by exposure to a tropical sun. The Gun spirits are held responsible for swellings of the lower limbs and for ague, diseases often attendant on life in the swamp jungle.

A very usual line of argument, well exemplified in dakans Data gun and Pulum, is as follows: One man hits another in the eye and the sufferer is thus blinded; if, therefore, a person "spontaneously" becomes blind, it follows that a spirit has hit him in the eye.

As may be seen, then, by careful examination of our dakan list, in the majority of cases where the real facts concerning the image and its use are clear, there is a sound logical connection between the sickness and dakan used; in our opinion the study of this phase of their spirit worship is a most interesting chapter in the deductive science of a primitive people.

In the following account of dakans we condense the facts relating to the ceremony, as it is almost invariably the same as already described.

Dakans vary much in size: an average dakan from Mukah has a length of 8 or 9 inches, but some are smaller and others much bigger. The same kind of dakan varies in its proportions according to the maker.

Particular Account of Dakans. Iang Class.

Naga Sebalun.—A wingless, four-footed dragon, with the tail coming over his back. Used for bilious attacks or poisoning. After the incantation ceremony it is deposited on the river bank.

Naga Singa.—A dragon's head on the legs and feet of a man. *Singa* in Malay means "a lion," but they have no acquaintance whatever with this animal. Used for heartburn. This is a river spirit, but the dakan is not taken out of the house.

Naga Permalei. (Known at Oya as *N. penganan.*)—A dragon's head on the body of a snake. They believe that when a certain poisonous water snake becomes old it turns into this spirit, and now disappears from human gaze to live only at the bottom of the river. This dakan is used for a heart affection. Their mode of reasoning appears to be that just as when a poisonous snake bites a person the result is a heart failure, so probably a heart disease to which no material cause can be assigned is due to the action of a snake spirit. This dakan after use is attached by a string to a pole standing on the river bank, the dakan itself resting on the water.

Naga Timun.—A dragon's head on a body like a cucumber. This dragon is the spirit which, flopping about in the rivers, causes a turmoil in the water, thus undermining the banks and bringing down the trees growing thereon. This spirit is harmful to mankind in causing the infantile sickness which we associate with an



NAGA TIMUN.

overloaded stomach. They evidently connect the internal motions of the stomach with the violent commotion of water. After the incantation, this dakan is put on the river and allowed to drift: if it were tied up near the house, as in the previous case, the bank would collapse.

Naga Bĕrkalih.—Two dragons, each with a snake's body, the tail of the one joined to the head of the other. This spirit has his dwelling place in all whirlpools, both in rivers and seas. He causes people to retch violently without being able to vomit. After the ceremony, this dakan is floated away in the water. The next dakan is scarcely distinguishable from this.

Naga iang angan.—Two dragons, each with a snake's body terminating in a

pair of legs. This spirit lives in the foam of rivers and is specially in evidence during floods. It causes bad stomach ache with internal noises "as if from a living creature within."

After using, the dakan is floated away in a patch of foam.

Naga Bĕrtampa.—This is a Naga *permalei* holding captive under its head a *belalangan iang* (*q.v.*). The latter is the familiar spirit of the Naga. The Bayoh man's incantation is directed towards the removal of the *belalangan iang*. It is used for dysentery. After the incantation it is tied up to a pole in the river.



NAGA BĔRTAMPA.

Belalangan Iang.—A person with arms over his chest, the body legless, but ending in a swimming tail. This spirit swims about in the water. He causes dysentery. After use it is tied up to a pole in the river.

We have another dakan of this name very like the one just described, but differing in that this second dakan is eating his tail. This river spirit causes dysentery: the bleeding of the bitten tail they associate with the loss of blood caused by the disease.

Belalayang Iang.—A person with a long bent swimming tail, bifid at the end. This spirit is the cause of lunacy. The image is tied up in the river near the house ladder.

Belalangan Sian Pĕpugong.—This dakan is a composite structure, in shape like a circular tower, the walls of which are made up of water spirits separated from each other by upright columns, representing the walls of their dwellings. The spirits here are supposed to be working together. The names of the individual spirits are:—*naga iang, belalangan liso, belalayang iang, sĕpărangin iang, gelap iang, dalong iang, jakau iang, gin iang, belalangan sian iang.*

Around the top and bottom of the dakan are twisted the figures of snakes, and these snakes are the guardians of the spirits' dwelling place. This dakan is often used for dysentery. After the ceremony it is tied up in the river near to the patient's house.

Bu-Au-Iang.—We have no less than three dakans of this name:

(*a*) *Sea-spirit.*—A person with one hand up to his ear and the other on his back. This spirit causes fever, with sharp pains in the chest and deafness—note the position of the hands. It is floated out to sea.

(*b*) *Sea-spirit.*—A person wearing a sun hat, his neck encircled by a spiky collar. The spirit is the cause of relaxed throats. The dakan is tied up in the water at the mouth of a river.

(*c*) *River-spirit.*—A person with curious turreted head and with one hand on the chest and one on the abdomen. This is the cause of a tingling sensation all over the surface of the body. The image is consigned to the river, its feet being weighted so that it floats upright.



BU-AU-PENGAMAU-IANG.

Bu-Au-Pengamau-Iang.—A person with arms wide spread out and with a very long tongue hanging down on the chest. The spirit lives in shallow waters near the banks. It attacks children, giving them fits, when they assume more or less the appearance of the dakan. Finally it is placed close to the edge of the river in shallow water, its legs buried in the mud.

Bu-Au-Bĕrdinding.—A person with shades above and at the two sides of his face, the arms folded up over the abdomen. This water spirit causes unusual labour to a woman in confinement. The dakan is tied up in the river below the place where the family tread out their raw sago.

To Iang.—This is a composite spirit and as such is the most powerful of all the water spirits: it can give orders to the other spirits. The dakan in shape is a circular tower, the various spirits being arranged in an upright position all round. Between adjacent spirits are living posts, which also have names. At the top, bottom and middle of the tower it is encircled by snakes. The names of the individual spirits are:—*Gĕlap iang, Dalong iang, Jakau iang, Lĕliso iang, Sĕlayong iang, Gin iang, Pulum iang, Sĕmara iang, BuAu-Lĕliso bulu, Bĕlălangan sian iang, Sĕbah iang, Tujah iang.*

The names of the posts between these spirits are: *Siat, Babang, Bĕnĕnawa, Kĕlĕnatio, Bĕlipan, Tiek, Tatin, Bĕlĕbai, Tado, Belebang, Belelayang, Selepanai, and Bĕlulei or Bĕbuyun.*

The words just mentioned—we give the meanings later on—are almost all the names of insects, and it is no unusual thing for a clever Bayoh man to make use of such insects and by sleight of hand to draw them out of a sick person's body. This spirit causes dropsy. Also, however, it has great power for good, and people are wont to intercede with it when in pursuit of wealth or of children.

After the incantation ceremony this dakan is tied to a stake fixed in the river bank.



GĔLAP BĔRANTEI.

To Dat.—This is a married couple who are never seen separately. They each have turreted heads and the hands are ventrally applied. The wife wears ear ornaments. They cause dysentery. Their home is far out at sea where the *barongs* (sea boats) fish. After using, they are taken out to sea and allowed to drift.

Gĕlap Iang.—A person with both hands to his ears and with a turreted head. This river spirit causes sharp pains in the liver region. The dakan is deposited amidst the reeds at the side of the river.

Gĕlap Bĕrantei.—A person wearing a sun hat, with chains around his chest and with one hand up to the ear, the other on his chest. This dakan is not used alone, but only in conjunction with Jin Bĕrantei, whose slave he is.

Jin Bĕrantei.—A person riding on a ray fish; he has a chain round his body, has a hole in his hat to hold a torch, and he holds his beard in both hands. They say this is the spirit of the *ikan* (fish) Remahan. Fishermen often see this *antu* at night in the shape of an incandescent light—the torch—on the water. When they have this experience they always run away. The effect on a person victimised by the spirit is severe pains in the left side, followed by fainting. This dakan is floated off to the sea after use.

Jin Iang.—A person wearing a sun hat, hands up together on the chest, with a scaly body as usual with Iangs. This sea spirit has exactly the same effect on man as *Jin Bĕrantei.* This image is floated off to sea.



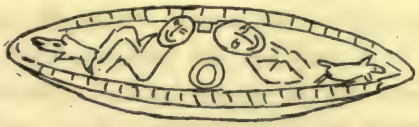
BĔRANTEI IANG.

Bĕrantei Iang.—A person with a snake twined round his neck, its head grasped in his two hands below. This river spirit causes a feeling of fulness in the chest and nausea. This image is tied up in the river below the house ladder. Note the connection of thought between the entwining snake and the feeling of fulness in the chest.

Dengong Iang.—A person with head turned round to one side, one hand being on his chest, and the other on his stomach. This sea spirit causes the tendons of the legs to retract, making it impossible to walk.

Dalong Iang.—We have two dakans under this name:—

(*a*) A boat containing two *antu* and two dogs. When this spirit company meets a person, if the dogs bark the *antu* will throw spears at the person, and the result of this is that the unfortunate sufferer has sharp pains in the intestines, accompanied by dysentery. In making this particular dakan, our Bayoh man did not make the spears of the *antu* lest they should be misused. The dakan is floated down the river at evening.



DALONG IANG.

(*b*) A man with hands crossed over his chest, wearing a *chawat* (a loin cloth as now worn by Sea Dayaks and formerly by Milano). It causes dropsy, perhaps that of beri-beri. The dakan is floated down the river at evening.

Dohiy Iang.—We have two of this also:—

(*a*) A man with a head cloth, with both hands on his chest. This spirit causes dropsy. It is floated down the river at night, and as it goes past the houses its influence makes the people sleep.

(*b*) A female spirit. She is bareheaded and has one hand on the chest, the other on the abdomen. She causes a painful swelling of the knee joints. It is floated down the river after use.

Potianak Laut.—Two people stuck together at the side like Siamese twins. They always work together. This spirit is the cause of hard labour in women during childbirth. The dakan is eventually floated out to sea. The name *Pontianak* (Malay), as an evil spirit associated with childbirth, is one of wide distribution, stretching up through the Malay Peninsula into Siam and India.

Jakau Iang Angan.—A person sitting down, with wings like scales all over his back. This river spirit causes dropsy. It is tied to the house ladder and allowed to float on the surface of the river.

Tujah Iang.—A man with a high scaly head-gear, with one hand on his chest and the other on his stomach. This river spirit causes sharp pains in the small of the back (lumbago). It is floated off in the middle of the river.

Kerawi Iang.—A four-footed person with curved head-gear and with a tail which curves up and is held up to the throat. This is a river spirit which causes severe coughs. It seems to be their belief that coughs are caused by a spirit pressing on the throat of some unfortunate human being. The dakan is floated in the river tied to the house ladder.

Sĕbah Iang.—We have two kinds of this name:—

(*a*) A person wearing a sun hat, with both hands over his forehead. It causes headaches: note the position of the hands. It is finally deposited on the seashore.

(*b*) A person with one hand on the throat and the other across the abdomen. This river spirit causes shivering and a violent contraction of the throat, so that the sufferer can scarcely speak. The dakan is finally consigned to the river.

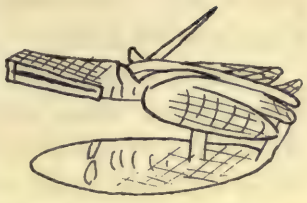
Gelamat Iang.—Of the two spirits under this name one is male and the other female. They are always used in conjunction. The male has a three-peaked head-dress, is winged on the back, and has his hands crossed over the chest. The female is very scaly all over and is winged behind. She has a conical head-gear, and her hands are together on the abdomen. This spirit couple lives in the rivers and causes dysentery.

Spirits of the Air. (*Langit Class.*)

Naga Terbang.—A dragon, whose tail curls up and goes into the back of the head. This dragon spirit makes one hot and bilious. After the ceremony it is stuck out at the end of a long pole, so as to be freely exposed to the air.

Naga Terbang Langit.—A winged dragon with two legs and a fan-shaped tail. This is for biliousness and heartburn. Used exactly in the same way as *Naga Terbang.*

Naga Terbang Bau Pari.—A *Naga Terbang* standing on a ray fish. This makes one hot and feverish, with a feeling of fulness in the chest. The dakan is hung up on a tree near the house.



NAGA TERBANG BAU PARI.

Naga Semalaiang Langit.—A dragon with two pairs of wings, one above, the other below. The upper wings are supposed to cause a feeling of fulness in the chest and throat, and the lower wings cold in the stomach region. This image is stuck up on the end of a pole.

Jin Separangin.—A person wearing a large head-dress with angel-like wings and with his hands up over his eyes. It causes fever and delirium. This dakan is placed in a specially constructed receptacle in a tree near the patient's house.

Jin Separangin Langit.—A winged person wearing a sun hat, one hand to his head and the other on his chest. This spirit causes sharp pains in the back. It is stuck out on a pole near the house.

Bu-Au-Separangin Langit.—A winged person whose hands are held up to his eyes. He causes headache and eye diseases. It is put out at the end of a long pole.

Sĕpărangin Langit.—A winged person with his hands up to his head. Used for headache with fever. It is tied up in a tree near the house.



BU-AU-SEPARANGIN LANGIT.

Bu-Au-Langit.—A winged person with hands over his chest. This air spirit causes fever. The image is hung by the neck to a branch of a tree near the house.

Bu-Au-Langit-Rabong Pengamau.—This is a boat which at one end terminates in a helmeted head. Inside the boat is an *antu* lying down. The boat itself is provided with a pair of wings. The *antu* (*bu-au-pengamau*) in the boat really belongs to the jungle, but is caught up by the *antu* of the boat and is carried about in the air. The two do their deeds of ill together, the *bu-au-pengamau*, however, being the more vicious. They are responsible for many fevers and delirium. The dakan is stuck on a pole high up in the air.



BU-AU-LANGIT-RABONG PENGAMAU.

Bu-Au-Ulo.—A stout person with both hands up to his head and with a truncated legless body. Used for very severe headache (*Ulo*, head). It is hung upside down in a tree near the house.

Bu-Au-Metiring.—A winged person with hands up at the sides of his head. This air spirit causes fever. The image is hung up on the branch of a tree.

Bu-Au-Lĕliso Langit.—A large winged person who below the waist ends in three spikes; one hand is on his chest and the other on his stomach. This spirit is the Rajah of all the spirits of the air, who all obey him; he has no power of

good to men. He causes fever and delirium. This spirit is tied to the branch of a tree near the house.

Rabong Langit.—This is a boat containing two spirits. The boat has at its sides a pair of wings, and it ends in a dragon's head. The contained spirits are *Sebulan* Langit and *Gelap Langit*, both of which bring about delirious fever. The dakan is put out at the end of a long pole near the house.

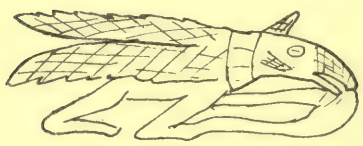
Gelap Separangin.—A person with one hand across his chest and the other on the head. This spirit causes fever, with a soreness all over the body. It is fastened to a branch of a tree near the house.

Kĕrawi Langit.—A winged, four-footed creature represented hiding the face with its tail. Another specimen of this dakan is a winged person with tail only reaching as far as the chest. He wears a crown of horns. It is used for chronic cough, caused by pressure of the *antu's* tail on the chest. It is placed in a little receptacle high up in the air, near the house.

Siau Langit.—This is a fowl. The fowl spirit causes asthma. They probably see a connection between the noise of fowls and that of asthmatic persons. The dakan is put on the end of a long pole above the house. (*Siau*, fowl.)

Maiau.—A male and female hornbill. This spirit of the hornbill causes bad coughs in children. The cry of a hornbill reminds one much of a harsh cough! The dakans are each placed on a split stick above the roof of the house. (*Maiau*, a certain kind of hornbill.)

Potianak Burong.—A winged animal with large curved beak and two pairs of legs, the anterior pair coming up towards the beak, and protruding outstretched hands as if lapping up a liquid. This spirit drinks the blood of childbirth. He may or may not cause special sickness to the woman. The dakan is hung below the house of a woman in confinement. There is no sprinkling of water in this case.[1]



POTIANAK BURONG.

Tujah Langit.—A winged person with one hand up to the head and the other across the abdomen. He causes fever, great weakness and perspiration. The image is hung in a tree near the house.

Babang Langit.—Babang is a large stag-beetle which attacks the coconut palm. The dakan is a crude representation of such a winged animal; his tail ends in a fan and the head has an armament resembling that of the beetle. The spirit of this beetle causes ear-ache. The image is impaled on a sharpened twig of a tree near the house.

Bua Dian.—A hollow ellipsoid containing two figures of spirits, *Daliso langit.* The surface of the image is much spiked. The spirits inside are brother and sister. This causes very bad headache when the head feels as if splitting. Perhaps the forcible splitting of the durian fruit when ripe suggested this dakan. It is finally hung up on a growing tree near the house.

[1] *Cf.* note on "Pontianak laut" and on "Penanggalan" in Skeat's *Malay Magic*, p. 327.

Jungle Spirits. (*Gun Class.*)

Bu-Au-Pĕngamau.—There are two kinds of this:—

(*a*) A person wearing a sun hat, his hands over his chest. The spirit dwells near the sea in Mahommedan graveyards. He meets people out walking, and causes them to have a fit. The image finds his resting place on the ground of the graveyard.

(*b*) A person sitting down with hands folded up over his chest. This spirit dwells inland in the graves of "heathen" Milano. He causes children to have convulsions. The dakan is placed on the ground in a Milano graveyard.

Bu-Au-Tō.—We have two kinds of this:—

(*a*) A person with curiously peaked head-dress, with one hand on his forehead, and the other on his chest. The spirit hits children on the head and thus causes convulsions. It is supposed to feed on the roots of the Kalinut tree, at the base of which the dakan is finally deposited.

(*b*) A person wearing a sun hat, his hands meeting over the chest. This spirit causes swelling of the leg. The dakan is deposited at the foot of any large tree.

Dohig Balo (*Balo*, widow).—A widowed lady with a long mourning cloth hanging from her head behind. She holds one hand on the tip of the heart. This spirit causes a numbness and great weakness throughout the body. Presumably the pain of mourning and the subsequent physical exhaustion after the death of a husband is so very general, that it is supposed to be due to this special spirit, which may also cause physical weakness on occasions other than a bereavement. This dakan is placed on the ground in the jungle.



DOHIG BALO.

Dohig Assam.—A long-haired old man with his left hand to his lumbar region. It is used for lumbago. This spirit frequents the neighbourhood of the Assam paya trees (*Zalacca conferta*) in the swamps, and he eats the fruits of this palm. Sometimes one meets it in the jungle, and then one should throw a dead stick at it. The dakan is put out into the jungle on the ground.

Dohig Darat.—A woman wearing a sun hat, her long hair sticking out behind, When she meets a mortal being, her hair pricks one's skin and the sufferer has a feeling of pins and needles all over, with internal fever. It is eventually deposited in the jungle.

Pulum.—A person with a long, peaked head gear, and with a dart stuck in one eye. When this spirit blows his dart in the eye of a human being, the result is

ophthalmia, or other eye disease. The spirit inhabits Moslem graveyards, where the dakan is eventually deposited after the dart has been extracted.

Dalong Tugan.—A person armed with a *parang* (sword) and shield, and in the act of throwing a spear. When this spirit throws his spear the result is sharp pains in the chest; if it catches the heart, the sufferer will succumb. The dakan is put on the ground in the jungle.

Bĕlălangan To.—A person with a blow-pipe and bamboo case containing darts. In the specimen belonging to the Sarawak Museum, the dakan is without its blow-pipe, as the maker of the image was afraid that the weapon would have been misused. This person is ornamented with a bead necklet and a pair of armlets such as the less civilized of Sarawak natives now wear. This spirit, by blowing his darts, causes sharp pains in the thorax, or in any other region of the body at which he may choose to aim. The dakan is often used after *Dalong Tugan* has been tried without success. It is eventually placed in the jungle.



PULUM. BĔLĂLANGAN TO. SĔBAH GUN (A). DATA GUN. DATA TANAH.

Sĕbah Gun (*Gūn*, jungle).—There are two dakans of this name :—

(*a*) A person wearing a sun hat, his hands over his chest. He causes sharp pains in the chest and giddiness. The dakan is placed at the foot of any jungle tree.

(*b*) A person with one hand on the abdomen and the other to his head. This spirit causes sharp pains in the abdomen. The image is buried up to the waist in the middle of a path in the jungle.

Data Gun.—A person with an elongated spiky head-dress. This jungle spirit lives in the ground, and when he hears anyone coming, raises his spiky head out of the ground so that the man treads on it. Such is the explanation of a curious swelling of the feet followed by sores, attendant on a life in the jungle. The image is buried in the jungle.

Data Tanah.—This is a person whose body ends in a broad, sharpened tail.

He causes exactly the same sort of swelling as *Data Gun.* The dakan is set down on the ground in the jungle.

Gĕlap Gun.—A person wearing a sun hat, his hand up to his throat. He causes coughs. The image is placed at the foot of a large tree.



GĔLAP GUN.

Jakau Gun.—A person with a bifid head-dress, his hands crossed over the chest. This spirit causes ophthalmia. The image is put at the foot of a small tree in the jungle.

Bĕlum Gun.—A small person wearing a sun hat, his hands together over the stomach. This spirit causes the feet to swell and itch. The image is buried in the jungle.

Bubun Banei Bejerunei.—This spirit lives far away in the deepest recesses of the jungle and is Rajah of all the jungle spirits, whence he issues his orders to the other jungle spirits. He has some power for good and can grant long life, riches and children, though he is not so powerful as *To iang.* He causes very low fever. The image finds its resting place at the foot of a fig tree in the jungle.

Dalong Pelekong.—A man armed with *sumpitan* held up to his head, and with *parang* by his side; beside him trots his dog. This jungle spirit is made like a Kayan, seeing that the warlike Kayan, four or five generations ago, were wont to swoop down from the interior upon the villages of the unsuspecting Milano. This spirit is supposed to come down from far up river, floating in a *doyan* or dyeing trough. With his *sumpitan* (blow-pipe) this spirit blows darts at unsuspecting mortals, causing sharp pains in the regions of the lower ribs. The image is put in the jungle either at the foot of a large tree, or at the source of a jungle stream in the water.

Obsolete Words and their Meanings.

The words used as names for these dakans are mostly of unknown meaning. Some few are known elsewhere, *e.g.*, *Potianak* (see note on *Potianak laut*); *buau*, which is well known to Land Dayaks as the ghost of a person killed in war; *iang*, also a Land Dayak deity, their divine instructor, the word *yang* being an old word used of the greater Hindu deities; and *jins*, the genii of the "Arabian Nights"; *pulum* may, perhaps, be the same as the *polong* of pagan Malays.[1]

At Matu and Oya the Milano name for the pith images is *bĕlum*; at Mukah *belum* means an enemy in the jungle. In our description of the dakan *Tō Iang* we mention the names of the living pillars separating the spirits; these names, belonging as they do to the obsolete "spirit" language, are almost all unknown to the average Milano. Such are *bĕlĕbang*, meaning a butterfly; *tatin*, the carpenter-bee; *bĕlebai*, the small phosphorescent centipede; *kĕlĕnatio*, the biting field-cricket; *belulei*, a night-flying beetle; *sĕlĕpunai*, a small hairy caterpillar; *bĕnĕnawa*, a large grasshopper; and *bĕlĕlayang*, the long-beaked fish known to Malays as *ikan julong*

[1] Skeat's *Malay Magic*, p. 328.

(*Hemirhamphus*). The other living pillars of the same dakan have names of modern use, viz., *babang*, the coconut-beetle (a large Dynastid); *siat*, a large white beetle larva (of *Oryctes rhinoceros*); *tiek*, a jumping beetle (an Elater); and *tado*, a caterpillar with poisonous hairs. In the case of the dakan names to which we can assign no meaning, it may well be that many of them are old Milano words of some such simple significance as those just mentioned, though some may be the names of the reverenced deities of other peoples with whom they have come in contact (*e.g.*, their *Jin*).

At the end of this paper we give some verses of the obsolete language as used by the medicine doctors in the incantation of a Bayoh ceremony. In all probability this "language of the spirits" is but the language of the common people as spoken by them a few generations ago; in recent times Malay has come into general use, especially where the Milano have adopted Islamism. Even the names of the dakans have now, in many cases, a Malay rendering in common use. For instance:—

Pontianak laut is the Malay form and *Potianak dāt* is Milano.
Naga terbang „ „ „ „ „ *Naga besilieng* „ „
Dohig darat „ „ „ „ „ *Dohig daya* „ „

In these and several other cases the first form is ordinarily employed by Milano.

Burial Customs.

Coffins of Milano are made to represent either a crocodile or a dragon, the cavity being cut in the body of the figure and closed by a lid above. Within the coffin is placed the corpse, specially draped for burial, and on the lid is an anthropomorphic image of plaited *nipah* leaf, which is covered over with a red cloth, red being their mourning colour. A similar leaf image is taken home and kept by the nearest relative. The coffin is deposited in the family dead-house or *bakut*, where it rests on two trestles of bilian wood. From a hole in the bottom of the coffin a bamboo tube leads downwards into the ground and serves to carry away putrefied matter; the lid is sealed down. When nothing remains but the dried skeleton, it was, in former times, customary to remove these bones to a mortuary called a *jerunei*. This is a cylindrical wooden structure, vertically arranged, reaching above ground to a height of about 18 feet, and having a width of about a yard. Below, it rests in a deep hole, and in placing the *jerunei* in its position it was customary to have a slave at the bottom of the hole; the huge structure was, during the ceremony, dropped on the person of the helpless slave. Sometimes another slave would be bound to the top of the *jerunei*, where he would starve to death. At the top of the mortuary a large jar is supported between four prongs sticking upwards from four corners of the *jerunei*, and this jar receives the newly-arrived remains. Lower down the structure a large aperture in the side leads into the cavity of the mortuary; into this cavity the skeletons of the jar are placed when there is no further room for recent arrivals. The woodwork is elaborately

carved with phyllomorphic designs. Only very few of these *jerunei* are now in existence, and it is almost certain that no more will be made. Some fine specimens of this odd-looking grave are still to be seen amongst the Long Kiput of the Baram River.

The *bakut* mentioned previously is a one-roomed house built according to no stereotyped designs, and there is much variety of taste shown in those of a graveyard. They appear to vie with each other in producing a building of greater beauty and endurance, so much so that it is often said of them that the houses of the dead are usually better than those of the living. Often the wood is of *bilian*, the toughest and most enduring of Bornean woods, and this is elaborately carved at the sides and on the ridge of the roof, the side designs being apparently phyllomorphs and those of the ridge being largely made up of dragons in various attitudes. The size and finish of the *bakut* varies according to the wealth of the family who built it. From the roof and sides of the house project a number of flags and opened umbrellas, which give an air of gaiety to a place of otherwise sombre features. The graveyards may contain a great number of such *bakuts*.

Coffins are temporarily buried, but this only occurs sometimes when there is no *bakut* (family dead-house), and burial should not take place until the *sabong* (cock-fighting) and feast have been held. In such case the coffin is buried from one to ten days after death, according to means: it is the custom that as long as there is an unburied corpse in the house, food and drink must be offered to all who enter, which, of course, entails considerable expense. Having buried the coffin, the relations put up a *bakut* as soon as possible, and when it is finished the coffin is dug up and placed in it. If they already have a family *bakut*, the coffin is put straight into it. Those who can afford it always have a *sabong* (or cock-fight) for the benefit of the dead man's soul. This may continue several days, and absolutely open house is kept all the time. As much as $800 was spent over this on one occasion lately, but from $200 to $500 is more usual, nowadays.

All the cocks killed and things used at this *sabong* are supposed to become the property of the dead man's spirit.

When a man dies, his soul comes out of his body and is met by *Jepang*. *Jepang* conducts the soul to the entrance of Hades, where *Balo Adat*, chief of the realm of the dead, receives it and allots it a place. After the *sabong* a journey is made to the burial ground, the coffin opened, and some one knocks loudly on the lid with a piece of wood. Then another person, who is conversant with the ancient language, sits before the opened coffin and, talking in that tongue, asks *Balo Adat* to allow the dead man's spirit to revisit the resting place of his body, and the soul accordingly makes the journey back from the country of the dead. Then it is told what has been done during the *sabong* and asked to take possession of the things offered for its prosperity in the next world. The soul then goes back to the realm of shades, where it henceforward is enabled to enjoy all the property presented to it by its relations on earth. The coffin is then shut and returned to its place or

buried, and this ceremony, the last duty of the living towards the dead, is finished. The Mukah Milano, although now great gamblers—having caught the vice from Chinese and Brunei people—do not bet on the result of these cock-fights. When a cock is killed, it is handed over to the women to be cooked and forms part of the feast.

Distribution of this and Cognate Forms of Spirit Worship.

It is somewhat remarkable that the dakan custom of Spirit Worship is a very isolated one in Borneo. It is, in fact, confined to the Milano: at the same time it is quite a usual thing for other natives of this island to make images to represent spirits, but these are rather of the nature of tutelary deities and remain about the house or village for an indefinite period. And again, in cases of general epidemics or of serious sickness of some important person, it is a general custom of other races as well as of Malays to construct small or large spirit boats, known as *lanchangs*, which are floated down the river.[1] According to Mr. Boden Kloss, a similar custom is in vogue in the coast villages of Singapore, Johore, and East Sumatra, and in the islands of the Rio Linga Archipelago: here, when a man falls ill, he makes either a human image or a house, or a small ship, into which the spirit of sickness enters to the relief of the sufferer: the former two would be taken to the jungle and hung on trees, and the boat would be sent off to the sea. Such is the custom of people who are real Malays. In many parts of the Malay Archipelago images of similar appearances are common, but they are usually more permanent and are not used in the same way as the Milano dakans. A collection of images acquired by Mr. C. Boden Kloss from Nias, West Sumatra, has a fairly general resemblance to our dakans, and in the case of a few individual images the likeness is very striking. We are informed by Mr. Boden Kloss that the Nias images are kept in the houses of the natives as household deities.

Something very similar to the Milano custom is to be found also amongst the Toba Batak, living in the interior of Sumatra to the south of the Tobo Lake, where in case of disease they carve images out of the stem of a banana tree. In the southern part of Bantam (island off Java) images are made of a kind of vermicelli made from rice paste, and these images are deposited in the jungle to please the spirits.

As we have previously mentioned, the Milano are quite distinct from Malays, belonging to the group of tribes known as Kalamantan, which, we opine, is closely related to the wilder tribes of Sumatra and other islands of the Archipelago. But we have seen that their religious customs are shared to some extent by Malays as well as by the more closely related tribes, and we are inclined to think, therefore, that the spirit worship just described is but a much exaggerated product of a simple religion which in essential principles was common to pre-Islamic Malays and to the above mentioned peoples (Indonesians); and that it is carried to the greatest extreme

[1] See also Skeat's *Malay Magic*.

by the Milano of Sarawak. We suspect that the images made in these islands have a unity of origin, in spite of the fact that they are used quite differently in the various localities. When the ancestors of these people learned the notion of image making we do not know, but it seems probable that the custom is one of considerable antiquity, and of internal origin, seeing that the Indonesians of practically all the far-off isles practise some such form of spirit worship.

The materials for most of the facts mentioned in our account of dakans was supplied by an aged Bayoh man of Mukah. Many of his statements and names have been satisfactorily checked by information supplied from a perfectly independent source in Kuching. Quite possibly, however, one or two of the lesser dakans are special pet inventions of his own, and we imagine that most Bayoh men occasionally strike out a little way in a new direction. In conclusion we venture to predict the gradual extinction of these interesting customs at no very remote date: Islamism and Christianity are gradually displacing paganism, and at the same time, by contact with Europeans and civilization, the Milano are perhaps becoming less credulous.

Incantation Chant in the Language used by Bayoh People.

Collected by the help of Father B. Mulder from a well-known Bayoh man of Mukah.

Pado paman dĕna
Pado lilei dua ida
Pado Jin Arabi Diwa
Mĕlukut mĕran bunga.
Pado rungo paman mara
Tugo ringei tĕpa
Tĕgusan tĕpa data
Bĕsalam mara lipa
Pado paman bawai mara lipa.
Ringei bĕbai lipa
Kilei kena rawai
Pado paman dĕna
Mara pisei kĕna lipa.
Lipa pisei kĕna rawa
Pado paman ba'ai
Juloh kŭman bau bara bato ladai
Pado miwik miai
Chelaka mara surai,
Deggan pallei būt atai
Jikalau sĕta jagi adai
Bĕkira puhun miai
Pado kŭman daya
Pado lilei dua ida
Mĕpit ringei miwik mara
Pado kuman dawai
Pado daya paman jangai
Mĕpit mara miwik miai
Chelaka deggan atai
Pado kuman bau surai
Miwik mara mĕpit sĕlai
Chĕlaka deggan atai
Bărăngkali jaji silong adai
Mara lipa ringei nusai
Lato talek linga.
Talek bumei kŭman bau bara
Mĕna'ah midan gega
Gega kawai bajo pila
Miwik rungo mĕpit mara
Bărăngkali lo'mara lipa
Miggi' jaji bĕba sĕta
Lato talek bulai
Talek linga bulai sawai
Mena'ah midan nirai
Gega tabor aran pakai

Sĕno gega puhun kawai
Miwik tĕpa tugoh sawai
Tĕgusan to jangai
Bărăngkali sĕta tugan alai
Pado pawang dena
Pawang liko kŭman bau bara
Gnada lelo se remua
Bărăngkali puro lipa rawa
Bĕjaji bĕba kira
Lato talek linga
Medeli sama diwa
Pado mĕpit miwik mara
Bărăngkali uro jaji lipa
Bĕjaji bĕba kira
Mara pisei kena lipa
Payun (berayun) piro pawa
Bau tali pusan sĕga'
Kedong bei tada
Tō mugi menga rĕja
Tō mugi mimun bunga
Mematun bunga tada
Lato talek bengo
Talek lilei kŭman bau bato
Minyai kawai menyut bajo
Miwik mara, mĕpit rungo
Lato talek linga
Talek kŭman bau bara
Lato bengo lato kŭman bawai mebo
Miwik mara mĕpit rungo
Timan kira yadin uro
Bĕkira kawai puro
Mĕpit mara miwik rungo
Mara pĕrai nabor tō
Ba miggi' sĕta jaji uro
Selamat deggan liko.

(Note.—In the above, final *ei* represents the sound of *ay* in the English "day," "tray," etc.)

The Bayoh calls on the spirits (the names "Jin" and "Arabi Diwa" seem to be borrowed and incorporated into the old verses, but *Mĕlukut meran bunga*, or "noble," a female spirit, does not sound so familiar) as if they were far away up river, to "come in boats floating quickly" (*pado paman dena*) and take away the sickness, remove the evil, etc., saying that if the spirits wish to do so it is certain that they can. In fact, the whole incantation is a succession of appeals of this sort to the spirits, who come gradually nearer and nearer until the chant addresses them as if they were just outside the house, and finally as though present in the room.

Note.

Even in this old language or *tĕlabau dana* there is a good sprinkling of Malay words, often pronounced wrongly because a Milano either cannot or will not give them the proper sound in speaking.

i.e., *bato*, in line 16 is the Malay *batu*
bayo „ „ 37 „ „ „ *baju*
atai „ „ 19 „ „ „ *hati*
linga „ „ 34 „ „ „ *tĕlinga.*

These have been written in the Milano style for the sake of rhyme, as they sometimes end a line in the chant, but a few other words have been written as pronounced by Malays. Thus *chelaka*, if written as pronounced by Milano, should have appeared *selaka*. An ordinary Milano cannot pronounce the sound *ch*.

The word *yadin* in line 74 has been written as the Milano pronounce it, in order to show how an adopted word is sometimes distorted. It is the Malay *jadi*.



FIG. 1.—SICKNESS BOAT OR *LANCHANG*.



FIG. 2.—GROUP OF MILANO.



FIG. 3.—A GRAVEYARD.



FIG. 4.—WITCH DOCTOR AND APPARATUS.

SPIRIT WORSHIP AMONGST THE MILANO OF SARAWAK.

Journal of the Royal Anthropological Institute, Vol. XXXVIII, 1908, Plate XXXIV.

HINDU BETROTHAL OBSERVANCES IN THE PUNJAB.

By H. A. Rose, Local Correspondent of the Royal Anthropological Institute.

Shastric Ideas on Betrothal.

A Hindu friend[1] has furnished me with the following account of orthodox Shastric ideas on the subject of betrothal, and I prefix it to my notes on "Hindu Betrothal Observances in the Punjab," as it contains many points of interest.

The relatives who can give a binding promise of betrothal are:—the father, paternal grandfather, brother, a *sakulyâ*,[2] and lastly the mother. But if any one of these disregard the *prikratî* or *kûlâchar* (family custom) he loses his or her privilege and it devolves on the next in order. *E.g.*, if the father is inclined to sell his daughter, the right to betroth devolves on the grandfather, and so on.

Betrothal being governed by various considerations, it is no hardship on a boy or girl to betroth them in infancy. The guardian of the girl should not only see the boy's body, but have regard to his conduct, family means, education and repute. He should choose one whose age is double that of the girl, but not treble her age or more. The boy should be sound in body and in mind, and his family should be free from hereditary disease. He should not live too far away, be constantly engaged in war, or an ascetic, and, apart from these general considerations, he should have the following particularized qualifications:—

Broad or deep should be his chest, face and forehead, his navel, voice and *satya* (inherent power).

Short his throat, back, male organ and legs.

Fine (*sakhsham*) his hair, nails, teeth, flesh and the joints of his fingers.

Long the distances between his eyebrows and his breasts, his arms, his nostrils and his chin.

Red should be his palate and tongue, the soles of his feet and the palms of his hands, and both the corners of each eye.

Countless other points of palmistry have also to be considered. Thus, a boy with no lines, or too many, in his hand will be poor and short-lived. Lastly, horoscopes have to be consulted, and it is important that neither party should have been born in the *mangal râs*, or house of Mars, because, if so, his or her mate is doomed to an early death.

On the other hand the girl should be *aspinda*, *i.e.*, not related to the boy within the following degrees, thus:—

She should not be of the same *gotra* as the boy. (The *got* of the maternal grandfather is also sometimes avoided.)

[1] Pandit Shib Râm Dâs, a Brahman of the Ganghâr section (Bashist *gotra*) of Bunjâhî status, whose family was originally settled in the Jhang District.

[2] The *Sakulyâ*; *i.e.*, one of the same *kul* or family.

She should be a virgin, beautiful, young and free from disease. She should also have a brother, for otherwise, according to the marriage contract, her first-born son would have to be given to her father, in order that he might become his maternal grandfather's heir. Various other qualifications are prescribed; health, good repute, a swan-like gait, fine teeth and hair, delicate limbs and soft red-soled feet without prominent joints. Her fingers and toes should be separated, and the palm of her hand shaped like a lotus for luck. Her shape should be fish-like, and on the soles of her feet there should be the marks of a goad and barley-corns. Her knees should be round, her legs free from hair, her forehead broad and prominent, the navel deep, with three deep wrinkles in the abdomen, the nipples round and hard, the throat like a lion's, the lips as red as a *trinha* fruit, the voice soft like a cuckoo's, the nostrils evenly matched, and the eye like a lotus. Lastly, her little toes should not touch the ground lest she become a widow; the second toe should not project beyond the big toe lest her character be lost, and her legs should not be long and thin, for that, too, is an omen of widowhood. Hair on the legs presages misfortune, and a prominent abdomen lasting sickness and sterility. Her eyes should not be a reddish brown, nor like those of a cat, for the latter denote easy virtue. Hair on the nipples will bring misfortune on her husband. Dry hair and everted lips show a quarrelsome temper, and so on.

Shastric law classifies women into four groups; Padmanî, Chitarnî, Sankhanî, and Hastnî.

When all these points have been investigated and the betrothal decided on, an auspicious day is fixed for its celebration, which should not take place in the month of Poh, Kâtik or Chet, when Venus and Jupiter are on the wane, during the *shrâdhas*, annual or general, *dwitîk* (intercalated month), or the *anatrâ*, when Venus and Jupiter are in the same *râs*, and so on. Sundays, Tuesdays and Saturdays are also to be avoided.

Betrothal was generally observed during the following *nakshatras* (asterisms):

Utrân and Parhân { Phalganî. Khârân. Bhadarpadân.

Also in Rohnî, Kritkân, Mrigshar, Maghhân, Hust, Swâtî, Utradhân, Kutân and Reotî.

On the day appointed for the rite the boy's party go to the girl's house and both parties are there seated, while Brahmans recite the *mangha-charan* or benedictory prayers, and Shrî Ganeshjî is worshipped in a brass dish (*thâl*); rice is thrown on Ganeshjî and the boy's party, and sometimes red-coloured water is also sprinkled over them. The girl's guardian then announces that the girl, daughter of so-and-so, is betrothed to the son of so-and-so. This is called the *wâkdân*, *i.e.*, "the *dân* or gift by word of mouth," and is the essence of the betrothal contract. It is now irrevocable, and there is a very strong feeling against breaking it.

When once the promise has passed the lips of the girl's father, it can only be withdrawn for grave causes. A Sanskrit adage says:—*Sakrit pradiyaté kanyá*, "a girl is given but once." Formerly, in respectable families, a betrothed girl whose *fiancé* had died could not be married, and if such a marriage occurred it brought social discredit on the family. A Mirotra Khatrî family in Multân is still looked down upon because it once contracted a marriage of this kind.

Then a *janeo*, or sacred thread, fruit, flowers and some clothes are given to the boy by the girl's brother or Brahman. The girl's Brahman applies the *tilak* to the boy and his kinsmen. The boy's parents and kinsmen make gifts to Brahmans and distribute money among them, an observance called *Náwán* (lit. name).

The boy is next taken to his father's house when a morsel of bread, butter, sugar and *khichrî*[1] is given him. This rite is called *Grâhiṇ denâ* (or gift of a morsel of bread). The females also distribute *khichrî* to the brotherhood, who, in return, give them presents. Till far into the night, songs are sung by the women.

Betrothal thus effected creates a kind of relationship, so that if one of the parties to it dies, the other is counted impure for three days.

In some families *gur* and a rupee, five pieces of turmeric, some *supârî* (betel-nut), rice and fruit are thrown into the laps of the boy's party at the betrothal.

Taking money for a girl is strictly forbidden by the Shâstras, and one who takes it goes to hell.

A proverb says:—

Kanjar te Qasai
Chuṭ nâl chuṭ watâî.

meaning that low-caste men are divided into (i) Kanjars who prostitute their girls; (ii) Butchers, who kill them; and (iii) those who exchange their persons.

Hindu Observances.

Amongst the Hindus betrothal is a contract, and is, as a rule, an indispensable preliminary to the marriage of a girl, though a woman once married cannot again be betrothed according to the ceremonies of a first betrothal.[2]

Betrothals are of three kinds:—

(i) *dharm*[3] or *pun*, in which the girl is given by her parents as a quasi-religious offering to her future husband.

(ii) *watta satta*,[4] (exchange) in which two or more families exchange brides.

(iii) *takke*, or *takkîân dî pachâr*, in parts of the South-west Punjab, in which a bride-price is more or less openly paid.[5]

[1] This is the custom in the Jhang District.

[2] *Punjab Customary Law*, ii, p. 118.

[3] *Dharm dî pachâr* in parts of the South-west Punjab.

[4] *Watte dî pachâr* in parts of the south-west.

[5] Such a betrothal (or the price paid for it) is said to be called *dambah* in Ludhiâna. *Pun* betrothal is confined to the higher castes, and instances rarely occur among them of the

I. The *dharm* or ritual form of betrothal is a religious rite. In it the initiative is almost invariably taken by the girl's parents.[1]

Thus in Gurgaon her father sends his family barber and priest to search for a suitable boy. When they have found one they return, and, if horoscopes are kept, compare those of the pair to see if they are in accord. If the girl's father approves of the match he sends the two delegates again to the boy's house with the signs of betrothal called *ṭîkâ* or *sikka*.[2] If the boy's father approves of the match,[3] he calls his kindred together and in their presence the delegates[4] place the tokens in the boy's lap, and some sweets into his mouth, simultaneously proclaiming the girl's name. The girl's barber or priest also makes a mark (*ṭîkâ*) on the boy's forehead with his thumb.[5] During the ceremony the boy is seated on a wooden plank (*chaukî* or *patrî*) slightly raised off the ground, on which, after it has been swept and smeared with cow-dung, a square (*chauk*) has been traced with flour.

The signs of betrothal vary, but in the South-east Punjab there is almost always a rupee, often a coconut and sometimes clothes.

Elsewhere in the provinces the coconut is replaced by dates, usually five in number, but often two or seven; thus in Gurdâspur the girl's father sends seven nuts (*chhowâtas*), one or more rupees and some clothes as a *shagun* or conventional gift to the boy. These are made over to him by the *lâgî* (a priest, a barber, or a bard) at his parents' house in the presence of his kinsmen, and in return he sends the girl a *shagun* of ornaments and clothes.[6]

In the Western Punjab the rite is quite as distinctively religious. Thus in Muzaffargarh, although the boy's father and kinsmen take the initiative and go

initiative being taken by the boy's people. Indeed, the instances noted are all from the Western Punjab, where the Hindu element holds a subordinate place under the Mohammedan tribes. Thus in Shâhpur, among most of the Khatrîs and Aroṛas, the boy's father takes the first step, but among the Khokharain, or upper class, Khatrîs, the girl's father does so (xv, pp. 22–23). In Muzaffargaṛh and Dera Ghâzî Khân, on the Indus, the boy's father always appears to take the initiative (xx, pp. 14–15; xvi, pp. 2–3), but this is not the case in Peshâwar (xvii, p. 28).

[1] In Hindi a betrothal is called *sagâî*, in Punjabi *mangewâ* or *mangnî*, from *mangnâ* "to beg in marriage." Kurmâî is a term widely used, especially in the Punjab. In Muzaffargaṛh (South-west Punjab) *pachâr* is the term used by Hindus. *Ropnâ* is also used in the Eastern Punjab for betrothal, but it literally means the present (of seven dried dates, etc.) sent by the girl's father to the prospective bridegroom.

[2] Also called *ropna* (in Sirsa). The use of the term *ṭîkâ* (*ṭikkâ* in Punjabi) in this sense is unusual and apparently confined to the South-eastern Punjab. Thus in Hânsî the girl's father sends a barber with a rupee to the boy's house, and the barber gives this rupee (which is called *tîkâ*) to the boy. In Jhelum *tîkâ* is used as equivalent to *tilak*.

[3] No public inquiry is made about the girl, but the women find out among themselves.

[4] Called *negî*, as entitled to *neg* or *lîk*, *i.e.*, dues, in the South-east Punjab. But a commoner term is *lâgî*, *i.e.*, one entitled to *lâg*, dues.

[5] This mark is more correctly and usually called *tilak*. It is usually made on the boy's forehead by the girl's Brahman with turmeric and rice. Occasionally her barber affixes it. In Jhelum it is affixed during the reception of the *shagun*.

[6] *P.C.L.*, xii, p. 3.

empty-handed to the girl's house,[1] they are there met by her father or guardian with his kinsmen and presented with *gur*, fruits or clothes, and the Brahman, if present, performs the worship of Ganesh and recites the *gotrachâr*. The *gur* and fruits are taken to the boy's house and there distributed.[2]

This rite is held on an auspicious day and must be solemnized at the girl's father's shop or pleasure-house, but not at the house where his women-kind live,[3] and after it the boy's father is called *putreta* and the girl's *dhetà*, the relationship called *sain* or *senr* henceforth existing between them. This relationship prevents their visiting each other or even eating together, while the future son-in-law (*jawâtra*) may not even speak to his father-in-law (*sohra*).

Thus betrothal in the South-west Punjab is a solemn rite and the tie it creates is irrevocable, so much so that it can only be annulled owing to impotence or incurable disease, and even when the boy or girl is thought to be dying the tie between the pair is solemnly cancelled by the following rite:—

In Muzaffargarh, where the rite is called *pânî pilâwan* (*i.e.*, giving water to drink), the boy is called to the girl's death-bed and made to stand by her pillow and drink some water. The girl also drinks, and then the boy says, "Thou art my sister." This, of course, dissolves the betrothal, but it is understood that if the patient recover the tie will hold good. In the event of the boy's not arriving till she is dead the girl's body is not burnt until he has looked upon her face, or if the body has to be burnt before his arrival some cotton is smeared with blood from her forehead and thrown into his house. Every effort is however made to prevent the cotton being thus thrown into the house and a watch is kept over it, the belief being that, if the cotton is thrown in, it will bring ruin upon the dwelling. After four days the blood-stained cotton cannot be thrown in and the house is safe.

In the adjacent State of Bahâwalpur a very similar ceremony called *mathe-lagâwan* is performed to cancel the betrothal. Thus, if the girl be at the point of death the boy goes to her and standing by her death-bed gives her some sweets, saying, *hân kâkî, mithâî ghin*, "dear sister, take this sweetmeat," and she must reply *liâ bhirâwâ*, "brother, give it me."

This cancels the betrothal, but if the sick child recover and the parents of the couple agree to the renewal of the contract the betrothal ceremonies are again performed by the parties.

The *mathe lagâwan* must be done at the house of the sick child, but his or her parents do their utmost to prevent it as it brings calamity upon their family. If

[1] They say they have come to arrange for the *pachâr* (betrothal) of so-and-so *chaudhrî's* (notable's) son. The reply is that the girl's father will consider the proposal (*wichâr karnâ*), and it appears to be etiquette for him to promise a reply in a week or a fortnight's time, when the boy's people again approach him.

[2] xx, p. 15.

[3] In Jhang there is a survival of this rite, a girl being shown her betrothed's bier, if the latter die before their wedding; or she breaks a clod of earth at his door or behind his bier, and, having washed her clothes, returns home.

they knowingly permit it no other Kirâr will contract an alliance with them. Consequently guards are posted at the door of the sick child's house to keep out the intruder who makes every effort to get in. Both sides resort to violence, so much so that sticks are sometimes used and serious affrays ensue. Disguise is even sometimes resorted to in order to obtain access to the sick child; for instance, the garb of a sweeper, etc., but if this too fail it is sufficient for the betrothed to strike his or her forehead against the wall of the sick child's house. This knocking the wall, which is termed *sawan*, must be performed within four days from the sick child's death, after which it is of no avail. If a child fails to perform the *mathe lagâwan* or *sawan* he or she cannot secure a second betrothal, being regarded as ill-starred, but if the ceremony be duly performed he or she is considered purified, and can readily contract a second betrothal.[1]

II. Betrothal by exchange is further divisible into three or more varieties, viz.: (i) *amho samhanâ* or simple exchange; (ii) *trebhanj* or threefold barter[2]; (iii) *chobhanj* or fourfold, and so on, in Muzaffargarh.[3] In all these the parties concerned meet at one place by appointment, and enter into the contract of giving the girls, one to the other, after which each girl's guardian gives *gur* or fruits to the guardian of the boy to whom his girl is betrothed. Then the Brahman, if present, performs worship of Ganesh and recites the *gotrachâr*. The *gur* or fruits are taken home and distributed.

In Jhang exchange betrothal is called *amo sâmne*, a term which in Multân is applied to direct, as opposed to *tarain vatnî* or indirect exchange. In Ludhiâna betrothal by exchange is called *hatârh*.

In Ludhiâna exchange marriage (*batte kâ biyâh*) sometimes takes the form called *bâdhe kâ biyâh* in which a girl of, say, eighteen years of age is exchanged for one of five. In such a case, a kind of disparity fine (*bâdhâ*) has to be paid to the party giving the adult girl.

Among the Gaddîs of Chamba, marriage by exchange is called *bolâ*, and the first of the rites observed resembles those described below in a *dharma-puna* betrothal. But when all the boy's people go to complete the alliance, a grindstone, pestle and *sil* (mortar) with three or five lumps of *gur*, *supârî*, *bihan*, and *rolian* are placed before them, and the *parohit* taking the *supârî*, etc., in the fold of his garment puts them in the mortar, receiving a fee of four annas from the boy's father before grinding them. He then mentions the names of the betrothed pair, and pounds up the spices. Then the *supârî*, etc., is put in a dish with the *gur* broken into small pieces, and distributed among the guests, the boy's father first taking a piece. The elder members of the bride's family do not take any, as that would be contrary to etiquette. Then the boy's father puts one rupee four annas in the dish, and from this silver the girl's parents have an ornament made for her. She also presents herself before the boy's father, and he gives her a rupee. The rest of the ceremony

[1] The *mathe lagâwan* is also observed in the villages of the Multân District.

[2] In which three betrothals are arranged in connection with one another.

[3] xx p. 15.

resembles that observed in a *dharma-puna* betrothal, but the coins put in the vessel come out of the boy's father's pocket. The whole rite is repeated in the other family's house, but not necessarily on the same day. Tuesday, Friday or Saturday is an unlucky day for these observances.

III. In betrothal by purchase the essential difference is that the initiative is taken by the boy's people, who go to the girl's house and there make the bargain. Then the girl's parents send their *lâgîs* (or more usually one man, the *nâî*) to the boy's house where the ordinary rites are gone through.[1]

In the north-eastern (Himalayan) corner of the Punjab, the initiative is usually taken by the boy's people. After certain preliminary negotiations, they go to the girl's house with their priest (*parohit*) to perform the rites. In a *dharma-puna* betrothal the girl's father gives the *parohit* some *dubh* grass, with at least four copper coins, which are to be handed over to the boy's father in token that he accepts the alliance. All remain the night at the bride's house, and after a meal, her father gives eight copper coins to the boy's father. These he puts in his dish as a perquisite for the man who cleans it.[2]

In Kullû, among the higher castes, the *parohit* fixes a day for the rite and is then sent with one or two men, with a present of clothes, ornaments, and money to the bride's house. There he makes the girl worship Ganesh, and she is then dressed in the clothes, and *gur* is distributed among the villagers or neighbours. In return her parents send a sacred thread and a betel-nut for the bridegroom, in whose village also *gur* is distributed on the *parohit's* return.

Among the Kanets, the local god fixes the auspicious day for the rite, and on that day, the boy's father or brother with two companions, takes the clothes and ornaments to the bride's house. She puts them on, and *gur* is then distributed without any worship of Ganesh. The lower classes have the same rites, but among them the boy also goes to his father-in-law's house at the betrothal.

When the initiative is not taken by the girl's father, it is fairly safe to assume that the parties are of low status or caste, and that the contract was not *pun*. Thus in Siâlkot, among the Chuhras, the boy's father goes to the girl's house with a female kinsman, and is then feasted, giving her father two rupees. Next the visitors are given an ordinary meal, and the girl's father gets another rupee. After this a blanket is spread on the ground, and the girl's father in the presence of his kin, brings a flat dish into which the boy's father puts the betrothal money, which varies in amount but is always considerable, sometimes amounting to fifty rupees.[3]

[1] *P.C.L.*, v (Ludhiâna), p. 43. But in Muzaffargarh Ganesh is not apparently worshipped in *takke* betrothals, xx, p. 16.

[2] The above are the customs in vogue among the Gaddîs of Chamba, but in the Churâh sub-division of that State the custom is for the boy's father or brother to place eight copper coins or as much as a rupee in the dish from which he has eaten. This is called *juth*, and the act *juth dâlnâ*. On the following day the betrothal contract is made.

[3] *P.C.L.*, xiv, p. 5.

Briefly, the essentials of a valid contract of betrothal are the public acceptance of the match, feasting and the exchange of gifts, the religious rites, if any are observed, being of secondary importance, even indeed if these are necessary to the validity of the contract.

It may be said generally that a contract of betrothal is irrevocable, except for certain definite causes, or in cases when it has become impossible of fulfilment. Even when its literal fulfilment is impossible owing to the death of the boy, there is a widespread feeling that an implied contract subsists to marry the girl to another member of his family. Instances of this custom are found in the Gûjars, Rors and Jats of Kaithal,[1] the tribes of Sirsa,[2] and in the Shâhpur District, where the general feeling is that the girl is a valuable piece of property, and that betrothal is a contract to transfer her ownership to the boy's family, when she reaches a marriageable age, but the boy's death cancels the contract.[3] It would appear that the castes or tribes which allow widow re-marriage have a strong feeling that the betrothal duly effected gives the boy's family a claim on the girl's hand, so that, in the event of her original fiancé's death, she may be married to another boy of the family. In Jhelum, on the other hand, the contract is revocable unless the formality observed be the *waq*, which is to all intents a marriage.[4]

Thus the advantages of the contract are all on the boy's side, in having secured a valuable chattel, little is thought of the girl's claim on the boy, only very exceptional circumstances would make the boy's family refuse to find another match for her in the event of his death. If the girl die the contract is void, her family having contracted to transfer a specific article, to wit a particular girl to the boy's family, and as that article no longer exists the bargain cannot be fulfilled, and her family has no claim to marry another of its girls to the boy.

The causes which justify a refusal to carry out a contract of betrothal are mainly physical (*e.g.*, leprosy, impotence, blindness, or mortal disease in either party). Immorality on the part of the girl is generally also a valid cause. As a rule immorality on the boy's part is not recognized as a cause for refusal to carry out the contract, and speaking generally, the contract is considered much more binding on the girl's relatives than on those of the boy, so much so that among the Jats of Lahore this principle is pushed to an extreme, and it is alleged that the boy can break off his betrothal at pleasure, whereas a girl cannot.[5]

A betrothal is also said to be revocable on other grounds, *e.g.*, on the discovery that the parties are within the prohibited degrees of relationship,[6] or that they belong to different tribes,[7] and apostasy would also justify its revocation.[8]

As a rule, among Hindus, priority of betrothal gives the girl a social, though

[1] *P.C.L.*
[2] *P.C.L.*, iv, pp. 89–94; of ii (Gurgaon), pp. 116–119.
[3] *P.C.L.*, pp. 24–25.
[4] *P.C.L.*, xix, p. 18.
[5] *P.C.L.*, xiii, p. 4.
[6] *P.C.L.*, x, p. 4.
[7] *P.C.L.*, viii, p. 3; x, p. 4.
[8] *P.C.L.*, x, p. 4; xii, p. 4; xiv, p. 6; xix, p. 18; xx, p. 16.

hardly a legal, claim to be married first, *i.e.*, to be married before the fiancé takes another wife. The reason is that in a Hindu household the first married wife occupies a more or less privileged position.[1]

The Ages of Betrothal.

The age at which betrothal may be effected is not fixed, and it varies among different tribes and in different localities, so that it is impossible to generalize regarding it. Thus in Kaithal the Rajputs assert that betrothal cannot take place before the age of ten, and girls are certainly betrothed at a much later age among Rajputs than among other (and lower) tribes, so much so that it is common to defer a Rajput girl's betrothal till she is fifteen or even twenty.[2] In Amballa, the Gûjars of Rûpar put the lowest age of betrothal at five weeks: many tribes putting the maximum age at forty years,[3] but it is not usual below five. Similarly in Gurdâspur,[4] Siâlkot,[5] Shâhpur, Jhelum, Dera Ghâzi Khân, and Muzaffargaṛh there is no restriction as to age, but the actual customs differ greatly according to circumstances. Thus there is a tendency to defer betrothal among the higher castes to a somewhat later age than is usual among the middle castes: *e.g.*, in Lahore, Jats betroth from four to six; and Rajputs from twelve to fourteen,[6] in Shâhpur, Hindus betroth from eight to twelve, and in Jhelum, before ten.[7] Generally speaking in the Western Punjab girls are betrothed at a very early age, much earlier than is customary among the Muhammadans, but boys are often not betrothed till puberty or later. The feeling that it is a disgrace to have a grown-up daughter unmarried is very strong among Hindus. Throughout the Punjab pre-natal betrothal is unusual, but not unknown.

Some Observances subsequent to Betrothal.

These are purely social and of little importance. In Hansi the boy's father sends sweets, etc., for the girl on festivals. These she returns with some money. Later the boy's father sends her ornaments—called *buba*. These, too, are returned with some cash, oil and clothes added, only three or four ordinary trinkets being retained.

In Multân, Muzaffargaṛh, there is a similar custom called *subha*, which consists in the exchanging presents of sweets at festivals. Clothes and toys are also sent. These presents, too, are sometimes returned by the girl's people. This custom is spreading, it is said, into Sirmur.[8]

[1] Whereas among Muhammadans the four wives are, in the eye of the law at least, absolutely equal.

[2] *P.C.L.*, viii, p. 2.

[3] *P.C.L.*, x, p. 3.

[4] *P.C.L.*, xii, p. 3.

[5] *P.C.L.* xiv, p. 3.

[6] *P.C.L.*, xiii, p. 3.

[7] *P.C.L.*, xv, p. 20; xix(?), p. 17.

[8] Very similar to the *subha* observance, yet distinct from is the observance called *gur* in Multân. It consists in sending *gur* (jaggery) fruit and vegetables with two rupees (Bahâwalpur coinage, which is cheaper) to the boy's father, "some time after the betrothal has been completed."

Muzaffargarh also appears to have some distinctive local customs in the *sâg* or *wat walawan*, which consists in the girl's father sending the boy's a request for *sâg* (vegetables).

The request is complied with and fruit of any kind in season sent. After this the fathers may have dealings with each other—a thing wholly forbidden to them before this observance. After it too comes the *watr sâkh*, in which the girl's father sends the boy's fresh fruit or greenstuff. In both cases the fruit, etc., is distributed among relatives and neighbours.

In Multân the betrotheds' fathers do not even salute each other when they meet, after the betrothal has once been effected, until the *Râm sat* observance has been duly performed. For this a lucky day is chosen, and then the girl's father with some of his kinsmen takes some sweets and Rs. 1/4/., Rs. 3 or 5 in cash to the boy's home, where he finds the latter's kinsmen also assembled. He presents the boy's father with the sweets, etc., and salutes him, saying "Râm Râm" (the usual Hindu greeting). After this the two fathers may salute each other if they meet.

In Jhang sometime after the betrothal an observance called *piridai* is in vogue. The boy's kinsmen with some of his kinswomen visits the girl's home where they receive sweetstuff or a rupee each, and the women of the boy's party are seated on a *piri*.[1]

I have to thank Mr. Longworth Dames for kindly reading the proofs of this paper.

[1] A small square figure worked in stringing bedstead; a very small basket made of bamboo or *til.*—*Punjabi Dictionary*, p. 926.

REPORT ON THE HYTHE CRANIA.

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[With Plate XXXV.]

The large collection of bones beneath the church of St. Leonard at Hythe has given rise to a great deal of speculation and assertion as to its origin, but, with the exception of 100 measurements made by Dr. Randall Davis in 1899, no systematic series of measurements has ever been taken.

The present contribution is a series of measurements of 590 crania from Hythe, and, incidentally, of skulls measured by the author at Dover and Upchurch in Kent, for comparison. It is hoped that, at a later date, the results of the detailed examination of the face as well as of the rest of the skeleton may be submitted to this Institute.

History of the Bones.

It is quite certain that the bones have been in their present position for over two hundred years, because the Vicar of Cheriton, near Hythe (1679 to 1719), writing in 1700, says that all records of their origin had then been lost, and the townsmen could not account for them in any way. It will be an extremely moderate computation to allow 79 years before 1679, when this vicar must have known of their existence, for all local tradition to have died out, so that we may safely say that the bones must have been under the church in 1600 and were probably placed there earlier.

In 1545 Leland visited Hythe and described the church somewhat inaccurately. He says that beneath it there is a "faire vault," but makes no mention of the bones.

This I think is all the real historical evidence available at present. Many battle theories have been advanced by Hasted and others to account for this, as they are so often advanced to account for other large collections of bones, but they have all been made comparatively recently, and have not stood the test of historical research.

Some medical observers have substantiated the battle theory by saying that the collection contains practically nothing but male bones which bear numerous marks of spear and battle axe wounds, and that, in addition, two perfectly distinct races are to be made out. How little this agrees with my own observation will be seen later on. I do not think it fair to take these gentlemen's opinions too seriously. Most of them are dead now, and any conclusions they formed were

apparently the outcome of one or two flying visits of inspection, and were never intended as authoritative pronouncements.[1]

The opinion of Barnard Davis, however, is on quite a different footing. He, apparently, never saw the Hythe series, but obtained six of the skulls for his own collection which is now in the Museum of the Royal College of Surgeons.[2] These, he said, by their shortness reminded him of the skulls of modern Germans, though he doubted whether they were other than those of Kentish people, whose only great battle had been that with death.

There seems every reasonable probability that these bones have been dug up from the churchyard and stacked under the church in the way which was quite usual in pre-Reformation days. It was then quite common, especially in towns, to have an ossuary beneath a church or a charnel house in close relation to it. There is said to be a large collection of bones walled up in the neighbouring church at Folkestone, while at Dover I had the opportunity in 1905 of inspecting and measuring some of a large series beneath the site of the vanished church of St. Peter, and these had been absolutely walled in and buried since the sixteenth century. At Upchurch, too, in the north of Kent, there is a small collection in a true crypt, and here also there is a battle tradition, though without any historic value.

The fact that Leland makes no mention of the bones does not, to my mind, prove that they were not there in 1545, because, given a crypt, its proper furniture in those days would have been bones, and their presence need not have called for special comment.[3]

One point which is noticeable about the Hythe bones is the way they are, and apparently always have been, stacked in a long pile allowing a free passage way beside them. It is only lately that it has been appreciated that what is called the crypt in this church is really a processional way provided when the new choir was built in the reign of King John. Since the time of the Reformation it has not been used for this purpose, and its north door has not only been closed but, until quite recently, has been earthed up on the outside by the gradual accumulation of soil.

It seems to me, and in this I have the full concurrence of the vicar, that the careful stacking of the bones along one side only of the processional way, and that the west side, and the free passage left close to the easternmost wall of the church, points to the bones having been placed where they are now while the processional was still used for the annual procession round the church, that is to say, in pre-Reformation days, though how much earlier we cannot tell.

The date of the stacking of these bones is of some little importance. Both Dr. Knox and Mr. Frank Buckland state on hearsay evidence that the bones were

[1] Lest I should seem to wish to suppress evidence pointing to a conclusion at variance with my own, I would strongly advise anyone interested in these bones to read the two papers of Dr. Robert Knox, *Proc. Ethnological Society*, 1861 and 1863, as well as that of Frank Buckland in *Curiosities of Natural History*, 4th Series, p. 181.

[2] In this series is, I believe, the very large skull described by G. Borrow in his novel *Lavengro* in 1851. He saw it in his boyhood, in the early years of the nineteenth century. By the courtesy of the Council a cast of this skull has been presented to the Hythe Collection.

[3] See also footnote on p. 422.

stacked about the middle of the last century, and that before that time they were lying scattered about the floor. Against this is the evidence of the late Reverend James Browne, vicar of Cheriton and chaplain of the Cinque Ports, who mentions the pile of bones in 1700. In addition to this there is at present in the church at Hythe an old steel engraving dated 1783 and showing the stack as it is now. It is very probable that, at the time the skulls were placed upon the shelves in 1851, a few scattered bones which were on the floor, and possibly were recent additions, were cleared up and the stack made more complete. There is, however, no reason to believe that the main pile of bones differs in its position to-day from that it held when it was first erected.

Assuming, however, that the bones came into their present position somewhere about 1550, and it is extremely unlikely that they were much later, what reason have we for believing that they came from the adjoining churchyard?

In the first place I should point to the extreme probability of such a thing in the absence of any definite evidence to the contrary. That a large number of these bones have been buried is indicated by the presence of earth in the interior of the skull as well as in the orbits and auditory passages, while on some of them particles of woody fibre remain mixed with a few hairs adhering to the occipital region, pointing to the probability of their having been buried in coffins. Moreover, I have very little doubt that the so-called spear and battle axe wounds are really the work of spades and pickaxes, and were certainly inflicted when the skulls had become friable many years after death.

I have demonstrated the great difference produced by blows of the same force and with the same weapon on skulls of people recently dead and on those which had been buried many years and, from the experience thus gained, I feel sure that the injuries found in the majority of these skulls were not the injuries from which their owners died.

Then this great pile of bones represents the remains of at least 4,000 people, men, women and children. This is no mere rough estimate, but the result of counting all the heads of thighbones seen in restacking the whole pile which the vicar has lately had done. It is absurd to think that this number of people died at any one time in Hythe. The total population is at present little more than 5,000, and although in the time of its greatest prosperity, which was in the reign of King John, the number of townspeople may have exceeded 4,000, there were at least four churchyards in which they could be buried. After this, until the time of Elizabeth, the town gradually declined.

Since the time of Elizabeth the entries of burials are available and, judging from these, it is evident that an allowance of forty burials a year for the preceding two or three centuries would be extremely liberal.

No doubt plague accounted for the death of some of these people, though certainly they did not all succumb in one visitation. We can study the effects of plague in the church records, and although the deaths are greatly increased in the particular plague years, they are correspondingly diminished for the succeeding three or four,

so that the average of five or six years, including a plague year, does not appreciably differ from that of five or six in which no plague occurred.

One more point of historical interest must be mentioned and that is that the grave-yard formerly did not exceed about two-thirds of an acre, though in more modern times it has been twice enlarged. This possibly furnishes a clue to the presence of ossuaries beneath churches in pre-Reformation times, since the habit then seems to have been to use a small churchyard over and over again while in more modern times, as soon as one plot of land is filled, more is consecrated.

Taking all the above points into consideration it seems extremely probable in the absence of any reliable evidence to the contrary that this stack of bones was finished during the sixteenth century, and that the bones composing it were gradually dug up from this or some of the neighbouring Hythe churchyards during the sixteenth, fifteenth and possibly fourteenth centuries. That, as the people whose bones these were must have died at least fifty years before they were dug up, and would represent the total burials of more than a century, it is probable that we are dealing with the remains of Kentish people most of whom lived in the fourteenth and fifteenth centuries.

General Examination of the Bones.

Although it is my hope to furnish detailed results of the examination of series of different parts of the skeleton later on, it may not be out of place to say here that the 590 skulls which have been measured consist of those which were picked out of the stack in 1851 and placed upon shelves, where they are now shown.

In restacking the main pile of bones during the last few weeks, nearly as many measurable skulls again have been found and put aside, but there is no reason to think that those measured are not quite representative. It was evident from the débris that women's and children's skulls had, owing to their more fragile nature, suffered more seriously than those of men, and this fact, no doubt, accounts largely for the excess of male over female skulls on the shelves, which I have measured. Indeed, in most recorded collections of skulls the males exceed the females.

Three additional skulls were dug up a few years ago on the site of the church of St. Nicholas. This was one of the three, or perhaps four, small churches which were in Hythe during the thirteenth and part of the fourteenth centuries, but fell into decay with the decline of the town, and were no longer used in the fifteenth century. Leland in 1545 saw[1] the ruins of these churches. These three skulls are therefore interesting for comparison, since they cannot have been buried later than 1365, as there is good evidence that after this Hythe had only one church, that of St. Leonard, left.

Of the stature and physique of the mediæval Hythe people I hope to be able to speak with more detailed knowledge later, but a preliminary measurement of 155 femurs points to the men having averaged about 5 feet 5⅓ inches, while the

[1] Or says that he saw them. Leland's account of Hythe and the adjacent church of Lympne makes me suspicious that he got his information from some neighbouring ecclesiastical centre, such as Canterbury or Saltwood, and never really visited the place.

women were about 5 feet 1 inch. (The average length of 76 ♂ femurs was 45·1 cm. and of 79 ♀ femurs 41·8 cm.)

There is no doubt that these people lived on coarse, rough food, since their teeth are in almost every case worn, often quite flat, and this applies to young people as well as old. At the same time caries is not nearly so common as it is in modern English people.

I regard this condition of the teeth as an indication that these people lived before bread was an ordinary article of diet, and when cakes of roughly ground meal were the ordinary fare. At any rate, the state of these teeth was identical with that of those found under St. Peter's at Dover, which almost certainly came from people who lived in the thirteenth and fourteenth centuries. They also form a contrast with the skulls I have examined from a disused churchyard under the site of the Bluecoat School near Newgate, most of which were from seventeenth century Londoners, and in which, while the wearing down was much less marked, caries was more common. In the recent restacking of the pile, several masses of hair were found, in which shades of red predominate. It is, I believe, a recognized fact that black and brown hair turns red by keeping, but in addition there is a good deal of flaxen hair, some of which, evidently from children, is done up in plaits. I fear, however, that the amount is quite insufficient to give us any good idea of the predominant hair tints of these people.

Besides the hair, a quantity of coarse earthenware pottery and wooden platters was found in the pile, as well as the upper part of an old shoe or boot of a very different cut from the present. All these things will be submitted to experts and reports furnished in due course.[1]

It should perhaps be mentioned besides that in the vault are some thirteenth and fourteenth century stone crosses, formerly gravestones, as well as part of the lid of a fourteenth century stone coffin. These, of course, need not necessarily have been connected with the bones, though they give some indirect evidence that burials of those times were later on disturbed.

Pathological Observations.

A large number of pathological specimens have come to light, many of which I have submitted to Mr. S. G. Shattock, who has been kind enough to advise me upon them. The commonest trouble undoubtedly is osteo-arthritis, from which a great many of these people must have suffered terribly.

Ten or twelve examples of syphilitic lesions were found in the form of ulcerations, necroses, gummata and periostitis. One skull with a large gummatous heaping up of bone has been shown to countless visitors in the past as an instance of a healing wound. If the modern theory that syphilis was brought from America by Columbus be true, these specimens were probably some of the later additions to the pile.

[1] Since the above was written the pottery has been taken to the Medieval Department of British Museum, and there pronounced to be characteristic of the fourteenth and fifteenth centuries. The wooden platters closely resemble those preserved in the old Leper's Hospital at Harbledown near Canterbury.

Evidences of ante-mortem injury are numerous, several fractured tibiæ and one or two fractured femora were found, and it is wonderful what good, straight unions were made. There are also several instances of healing wounds of the skull quite distinct from the much more numerous spade and pick-axe injuries already discussed.

The frequency of injuries quite bears out the reputation for turbulence which the Cinque Ports enjoyed during the middle ages.

I have seen the rickety tibia noticed by Dr. Knox, but apart from that have come across no evidence of the disease which I could recognize.

Measurements of the Crania.

I have divided the 590 skulls into 326 males over 20, 230 females over 20, and 34 children of both sexes up to 20; that is to say, until the suture between the basi-occipital and basisphenoid bones closes.

The division into males and females is, of course, only done to the best of my ability, and is liable to revision. Still, I have given great care to this point, and have placed a mark of interrogation against those skulls in the list which have given me most trouble in determining the sex.

I do not feel justified in giving an approximate age to the possessors of the skulls until I have the skull cap removed and cleaned, since my experience teaches me that the most reliable evidence is the amount of internal closure of the sutures. (See "Relation of the Cranial Sutures to Age," by F. G. Parsons and C. R. Box, *Journ. Anthrop. Inst.*, vol. xxxv, 1905, p. 30.) From what I can see, however, I should say that 242 are from people over 40, and 275 between 20 and 40 years.

This I should think a probably fair estimate when one remembers the numerous visitations of plague in the fourteenth and fifteenth centuries, and the notorious turbulence of the Cinque Port inhabitants.

Apart from the personal element which must always be discounted, I did not expect to find the female and children's skulls in anything like their due proportion on these shelves. It must be remembered that these bones have probably gone through the sorting processes of (1) decay in the damp ground; (2) exhumation; (3) stacking and its pressure effects; (4) modern handling. There are enormous numbers of fragmentary skulls in the great pile, and in these the women and children doubtless are in excess of the men. The inclusion of a certain number of female skulls among the males is probably counter-balanced to a certain extent by the reverse process, though in my case I do not think to the same amount. In any case, as long as the sexing of skulls remains a question of individual judgment, nothing approaching mathematical accuracy can be expected from the results of measurements, though I find that by shifting a block of 100 more or less doubtful skulls from one sex to the other, I have only succeeded in altering the average length index by ·1 per cent.

The measurements I have taken are:—

1. The ophryo-maximal length.
2. The glabello-maximal length.

3. The greatest parietal breadth.
4. The least frontal breadth taken where the temporal ridges come closest together.
5. The basi-bregmatic height.
6. The auricular height.

Personally, I prefer to work with the ophryo-maximal length rather than with the glabello-maximal, because it is uninfluenced by the size of the frontal sinuses, and also because it is more often available. Still, I think the two measurements should always be taken; partly for comparison with Continental measurements, and also because the contrast between the two lengths gives a clue to the development of the frontal sinuses, on the one hand, or the bulging forward of the forehead as it ascends, on the other.

I have also included the usual breadth and height indices, calculated by using the ophryo-maximal length as a standard in each case.

I confess that these indices mean little to me. If I am given the length, breadth, and height of a skull, I can roughly picture it and compare it with the average measurements of known series, but a skull with a high breadth index may be one of normal length and great breadth, or of normal breadth and little length.

Table I.—Length.

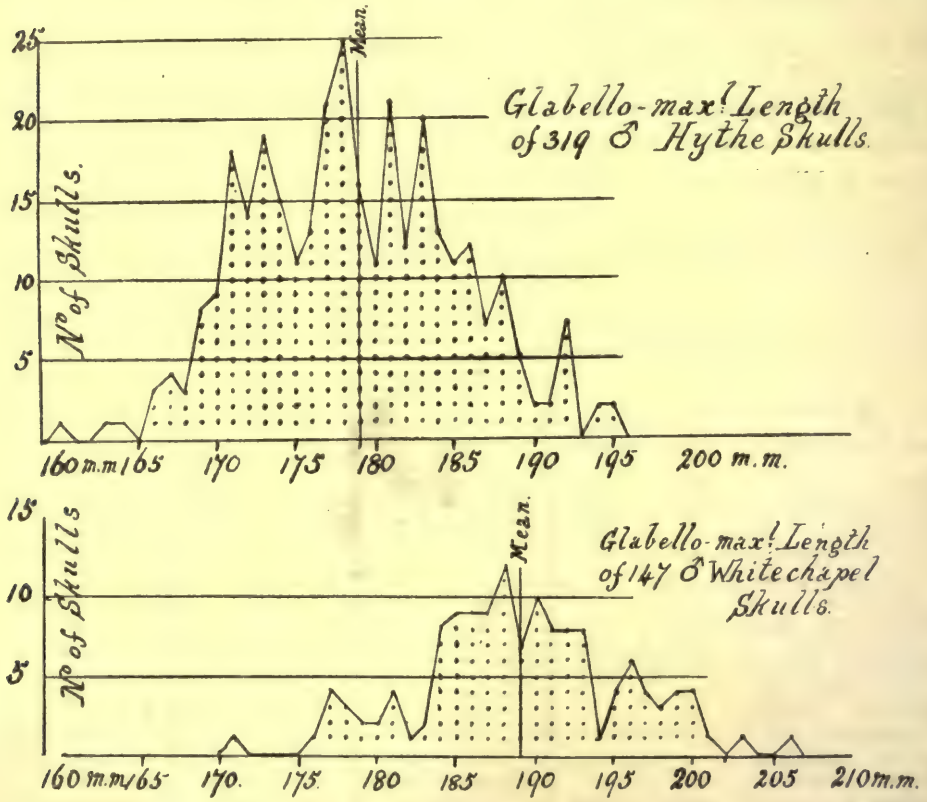
—	Males.				Females.			
	Ophryo-maximal.		Glabello-maximal.		Ophryo-maximal.		Glabello-maximal.	
	No.	Length.	No.	Length.	No.	Length.	No.	Length.
		cm.		cm.		cm.		cm.
Hythe	324	17·7	319	17·9	230	17·1	227	17·1
Whitechapel ...	138	18·7	137	18·9	143	18·0	140	18·0
Moorfields	45	18·7	44	18·9	65	18·2	63	18·3
Christ's Hospital ...	61	18·3	—	—	—	—	—	—
Cambridge Undergraduates ...	—	—	1,000	18·2	—	—	—	—
St. Thomas's Hospital Students	97	18·1	—	—	—	—	—	—
Women's Medical School Students...	—	—	—	—	50	17·5	—	—
Bedford College Students... ...	—	—	—	—	—	—	small series	17·9
British Association	—	—	?	18·7	—	—	?	17·5
English criminals ...	—	—	3,000	18·1	—	—	—	—
Upchurch	16	18·2	—	—	5	17·8	—	—
Dover	12	18·3	—	—	—	—	—	—
Bavarian	—	—	100	18·1	—	—	100	17·3
Würtemberg ...	—	—	97	17·9	—	—	19	17·3
French soldiers ...	—	—	56	18·0	—	—	—	—
Long Barrow ...	17	18·7	16	19·1	12	1·84	13	18·3

On looking at the above table the shortness of the Hythe skulls is very striking; they are shorter than anything else in the table except the glabello-maximal length of the Würtemberg males, while the female length of 17·1 is less even than that of the German female skulls.

Judging from the Hythe, Whitechapel and Moorfield series, which, taken together, include 507 male and 438 female skulls, it seems that the male English skull averages about two mm. more in the glabello-maximal than it does in the ophryo-maximal length, while in the female skulls the two lengths are practically the same.

In this and the following tables the Whitechapel and Moorfields skulls are those published by Dr. Macdonell in *Biometrika*, vol. iii, 1904, and vol. v, 1906.

The Christ's Hospital series was one I measured myself, and was dug up close to the site of the old Blue Coat School. It was in a disused grave-yard, and, among other remains, contained those of many prisoners who died in Newgate. From the way the bodies were buried I have little doubt that part at least of it had been used as a plague pit during the great plague.



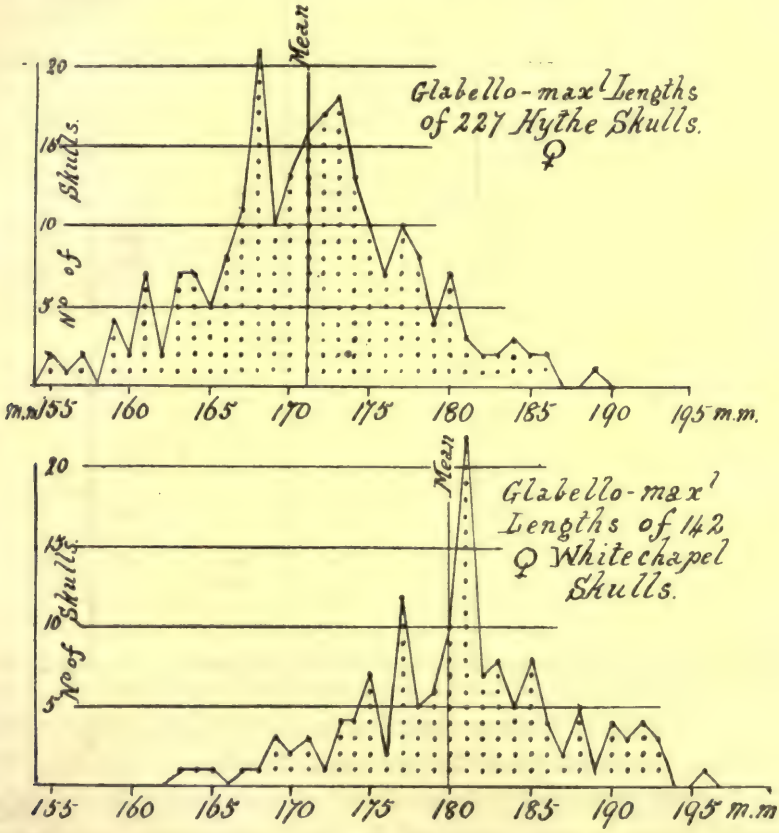
CURVE No. 1.

The St. Thomas's Hospital and Women's School measurements were made by me in 1907–08 on my own students in these medical schools, and the figures were gained by subtracting 11 mm. from the living measurements.

The Dover skulls were part of a large collection removed from the site of St. Peter's Church in Dover during some recent excavations. For the chance of seeing these I am indebted to the kindness of Canon Bartram. They are probably

about the same date as the Hythe skulls, but, owing to the crypt having been filled in with moist earth, very few were available for measurement.

The Upchurch skulls are in the crypt of the church there, not far from Rochester, and here again I am indebted to the kindness of the vicar. Indeed I should like to take this opportunity of acknowledging the unfailing kindness and help I have received from the many clergymen I have come across in the course of my various investigations. To the Reverend H. Dale of Hythe and the vicars of Christ Church and St. Sepulchre's in the City, I am especially indebted. I have been surprised and delighted at the extent of these gentlemen's knowledge of the unwritten history of their parishes, and only regret that space does not allow me to set down all I have learnt from them.



Curve No. 2.

The other series of skulls in the tables are taken from Dr. Macdonell's great works on the Whitechapel and Moorfields skulls already quoted. I have, however, taken the liberty of reducing the measurements to the nearest millimetre, since I feel that, so long as the determination of sex remains so uncertain, little is gained by working them out to several places of decimals. Indeed my absence of mathematical training would have made this very laborious in my own series.

The accompanying curves (1 and 2), contrasting the grouping of these skull lengths in the Hythe and Whitechapel series show that the Hythe skulls are in every

way as homogeneous a series as are those from Whitechapel, and that in neither group is there any appreciable mixture of types. The contrast between these two groups is worth making because, as far as we know, they represent the extremes of English skull lengths as demonstrated by large and homogeneous collections. It seems to me possible that Dr. Macdonell tends to err on the side of making too many doubtful skulls female, while my own tendency to error is in the opposite direction, but it is extremely unlikely that, if each of us determined the sexes of the other's collection, independently and anew, the means would approach one another by more than 1 mm.

TABLE 2.—BREADTH.

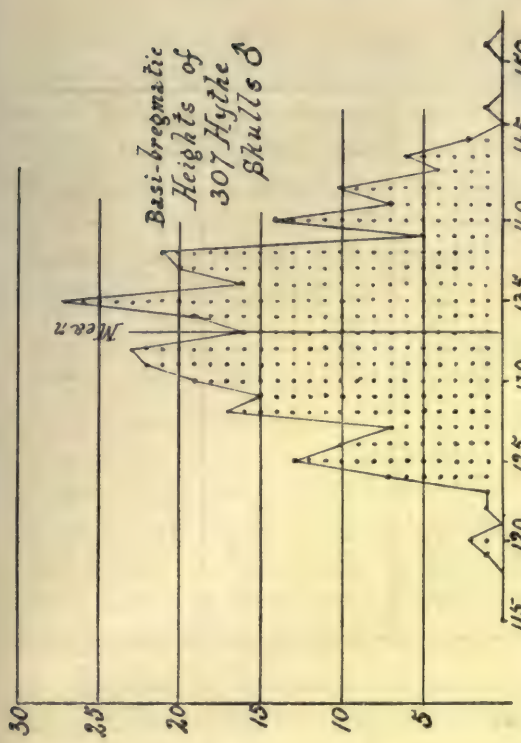
	Males.				Females.			
	Greatest parietal.		Least frontal.		Greatest parietal.		Least frontal.	
	No.	Breadth.	No.	Breadth.	No.	Breadth.	No.	Breadth.
		cm.		cm.		cm.		cm.
Hythe	324	14·3	318	9·9	230	14·0	228	9·6
Whitechapel ...	135	14·1	132	9·8	140	13·5	147	9·3
Moorfields	46	14·3	47	9·85	62	13·8	64	9·5
Christ's Hospital ...	61	13·9	—	—	23	13·4	—	—
Cambridge Undergraduates ...	1,000	14·3	—	—	—	—	—	—
[1]St. Thomas's Hospital Students ...	97	14·1	92	9·8	—	—	—	—
[1]Women's Medical School Students	—	—	—	—	50	13·7	50	9·7
Bedford College Students... ...	—	—	—	—	small series	13·6	—	—
British Association	?	14·4	—	—	?	13·7	—	—
English criminals ...	3,000	13·9	—	—	—	—	—	—
Upchurch	16	14·4	—	—	5	13·5	—	—
Dover	12	14·3	—	—	—	—	—	—
Bavarian	100	15·0	72	10·4	100	14·4	83	9·6
Würtemberg ...	96	14·8	98	9·7	19	14·3	19	9·4
French soldiers ...	56	14·3	56	9·6	—	—	—	—
Long Barrow ...	18	14·2	16	9·9	12	13·9	11	9·4

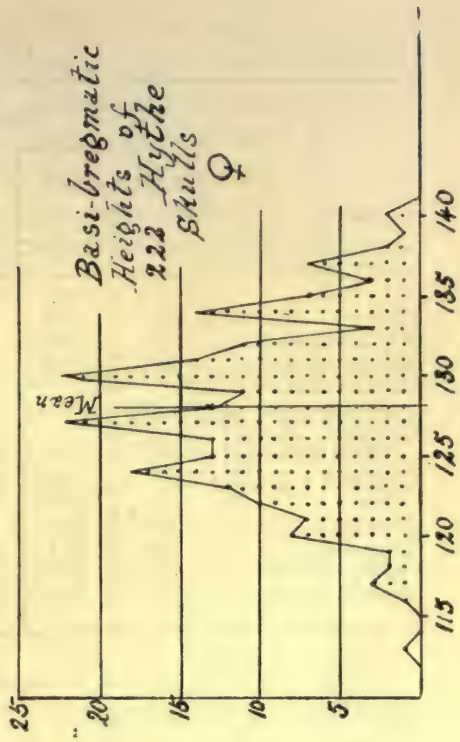
It will be seen from this table that the parietal and frontal breadths of the Hythe skulls are well developed, but not exceptionally so, while the accompanying curve shows the homogeneous nature of the group and the range of variation. (Curve 3.)

Table 3 shows that the Hythe skulls are of considerable height, indeed, their basibregmatic height is only surpassed by the Bavarian and Long Barrow skulls. This applies both to the male and females. Their homogeneity and range of variation is shown in the accompanying curve. (Curve 4.)

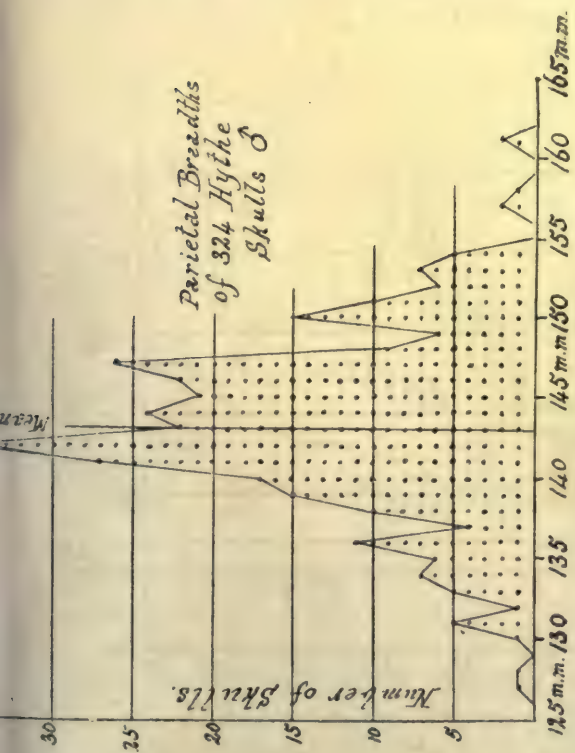
The relation between the auricular and basibregmatic heights may, I think, prove a point of considerable classificatory importance as our supply of material increases. In the male Hythe skulls the auricular height averages 13 mm. less than the basibregmatic, while in the females it is only 12 mm. less.

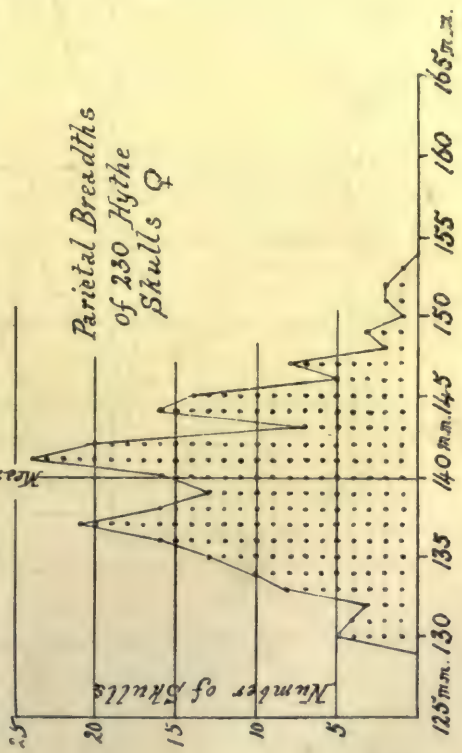
[1] In arriving at these measurements I deducted 11 mm. in the parietal breadth, but experience in the Dissecting Room showed me that 6 mm. was ample to deduct from the living frontal breadth.





Curve No. 4.





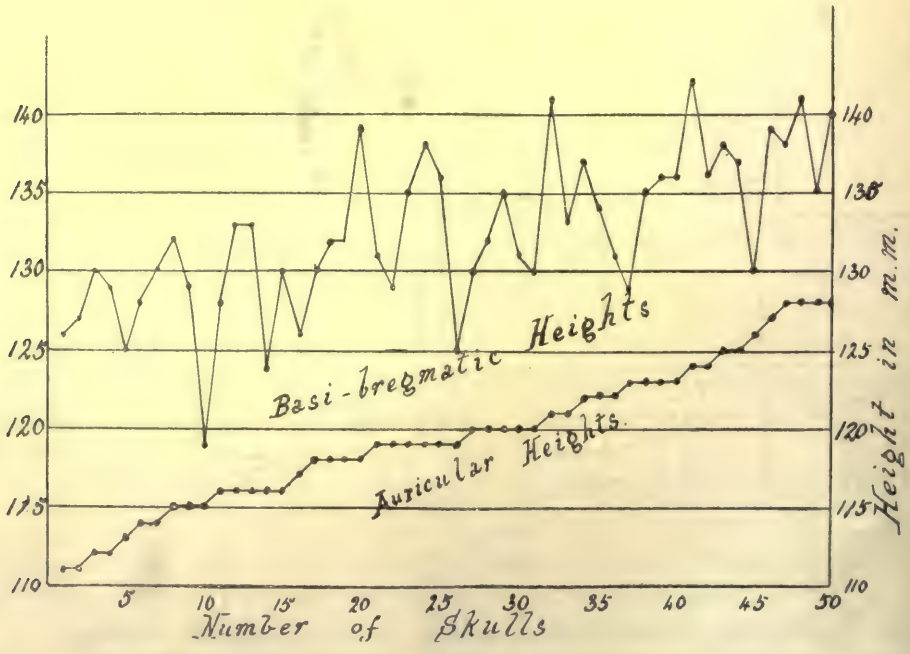
Curve No. 3.

TABLE 3.—HEIGHT.

—	Males.				Females.			
	Basi-bregmatic.		Auricular.		Basi-bregmatic.		Auricular.	
	No.	Height.	No.	Height.	No.	Height.	No.	Height.
		cm.		cm.		cm.		cm.
Hythe	307	13·3	294	12·0	222	12·8	215	11·6
Whitechapel ...	122	13·2	135	11·5	124	12·5	143	10·9
Moorfields	34	13·0	46	11·4	47	12·4	59	10·9
St. Thomas's Hospital Students ...	—	—	53	12·1	—	—	—	—
Women's Medical School Students...	—	—	—	—	—	—	25	11·7
Upchurch	13	13·2	—	—	Very few skulls available		—	—
Dover	12	13·0	—	—			—	—
Bavarian	99	13·4	100	12·1	96	12·8	100	11·4
Würtemberg ...	93	13·1	94	11·5	19	12·6	19	11·2
French soldiers ...	56	13·1	56	11·3	—	—	—	—
Long Barrow ...	12	13·8	9	12·1	9	13·5	3	11·8

This, it will be noticed, is the same amount as is present in the male Bavarian skulls, but is lower than that of every other series put in the tables for comparison.

The accompanying curve shows the auricular and basi-bregmatic heights of fifty skulls taken at random from the male series, and indicates how very wide the range of variation is from the mean 13 mm. (Curve 5.)



CURVE NO. 5.

Sometimes there is only 4 mm. difference between the two heights; at others as much as 21 mm. Indeed, among the female skulls in the collection there are three in which the basi-bregmatic height is only 1 mm. more than the auricular.

This variability would make the auricular height a most uncertain factor in estimating the actual height of skulls when a very small series is being dealt with, but when consecutive series of ten skulls are taken, the liability of variation is reduced to about 1 mm. each way, while if series of twenty are dealt with, it for all practical purposes disappears.

Indices.

The breadth and height indices vary of course with the particular length which is chosen for comparison. It does not make very much difference whether the ophryo-maximal or glabello-maximal is used, but it may, and in the case of the male Hythe skulls does, make all the difference as to whether they fall into the brachycephalic or mesaticephalic classes. I have, therefore, in the following tables placed both calculations side by side wherever both lengths are available, since I do not know whether there is any authoritative decision as to which should be used in classifying skulls according to their indices.

Table 4.—Indices.

	Males.					Females.				
	Breadth.			Height.		Breadth.			Height.	
	O.M.L.	G.M.L.	F.P.	O.M.L.	G.M.L.	O.M.L.	G.M.L.	F.P.	O.M.L.	G.M.L.
Hythe	808	799	692	751	743	819	819	686	749	749
Whitechapel	754	743	695	706	698	750	750	689	694	694
Moorfields	765	756	688	695	688	758	754	688	681	678
Christ's Hospital	760	—	—	—	—	—	—	—	—	—
St. Thomas' Hospital Students ...	779	—	695	—	—	—	—	—	—	—
Women's Medical School Students	—	—	—	—	—	783	—	708	—	—
Bedford College Students	—	—	—	—	—	—	760	—	—	—
Cambridge Undergraduates ...	—	783	—	—	—	—	—	—	—	—
British Association	—	770	—	—	—	—	783	—	—	—
English criminals	—	772	—	—	—	—	—	—	—	—
Upchurch	791	—	—	725	—	758	—	—	—	—
Dover	781	—	—	710	—	—	—	—	—	—
Bavarian	—	832	693	—	740	—	832	666	—	740
Würtemberg	—	824	655	—	732	—	827	657	—	728
French soldiers	—	798	671	—	728	—	—	—	—	—
Long Barrow...	759	743	697	738	723	755	760	676	734	738

Of the letters which head the columns, O.M.L. signifies an index taken with the ophryo-maximal length, G.M.L. one with the glabello-maximal, while F.P. is the fronto-parietal breadth index. The higher this index is the greater is the forehead breadth in comparison with that of the parietal region. In both the Hythe and Whitechapel series this index is six lower in the females than in the males, while in the Bavarian it is as much as twenty-seven lower. In the Women

Medical Students it is very high, which is worth noting when it is remembered that these are women of more than average intellect and mental training.

Capacity.

I have only at present taken the capacity of eight skulls, four male and four female, for the purpose of testing the various methods of estimating the capacity from the measurements.[1] I find that Pearson and Lee's formula,

G.M. length × breadth × auricular height × ·000337 + 406

for male skulls, and

G.M. length × breadth × auricular height × ·000400 + 206

for females, gives the best results except in one particular skull which was scaphocephalic. The results were much closer to the actual capacity, taken by shot, in the males than in the females.

Using Pearson and Lee's method on the average measurements of all the Hythe skulls already recorded, it would give the male skulls an average capacity of 1,441 c.c. and the females of 1,206 c.c. I fancy this is rather too low an estimate for the females, but in any case it is certain that these skulls are rather below the average of those of modern English people, just as the stature of their possessors was below that of modern middle-class Englishmen. I quite admit that more extended series of actual measurements of capacity are needed, but as things are it is very difficult to make them.

Skull Shape.

Every variety of skull shape may be found in the collection, but the most striking character is the number of skulls which have a steep, almost vertical, hinder end. The transition from the upper to the posterior surfaces is, therefore, comparatively sudden. The female skull (Plate XXXV, Figs. 1–3) gives a fair though not marked example of this. Bulging of the occipital bone is often coincident with this. The flattening of the posterior aspect, when it is very marked, gives the upper surface of the skull a sphenoid appearance, *i.e.*, a quadrilateral with a narrow surface anteriorly and a broad one posteriorly.

Comparison with St. Nicholas Skulls.

Having considered the different measurements of the skulls found in the vault of St. Leonard's church, it will be possible to compare them with those of the skulls dug up a few years ago in making a new revolver range at the School of Musketry and on the site of the old church of St. Nicholas. There is really very little doubt that these skulls were buried during the first half of the fourteenth century or earlier, since after 1365 the church was no longer used.

Two of these skulls are female and one male; they are considerably more decayed than the others, but this is easily explained by their having been in the ground during the three and a half centuries in which the St. Leonard's bones have probably been in the vault.

[1] The methods tried were those mentioned by Dr. Beddoe in his paper published in *Journ. Anthrop. Inst.*, vol. xxxiv, p. 266.

Table 5.

	Ophryo-maximal length.	Glabello-maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.
Males.						
Average measurements of St. Leonard's series ...	177	179	143	99	133	120
St. Nicholas' ♂ skull	172	175	151 ?	106	143	127
Females.						
Average measurements of St. Leonard's series ...	171	171	140	96	128	116
St. Nicholas ♀ skull, *a* ...	167	166	146	97	128	119
„ „ *β* ...	167 ?	167 ?	147	89	120 ?	116

From the above it will be evident that the chief characteristic of the Hythe skulls, their shortness, is very marked in these.

Variations in Sutures, Form, etc.

Bathrocephaly.

A marked bulging in the occipital region occurs in 51 of the 590 skulls, *i.e.*, in 8·6 per cent. It is, relatively, more frequent in males than in females, and in nearly two-thirds of the cases in which it occurs is associated with numerous wormian bones in the lambdoid suture. Dr. Macdonell found it in 5·2 per cent. of his Whitechapel skulls and in 11·6 per cent. of the Moorfields series. It is a little interesting to notice that the ophryo-maximal length of the male bathrocephalic skulls is 18·1 cm. against 17·7 cm., which is the average for the whole male Hythe series, while in the female skulls the bathrocephalic work out at 17·3 cm. against the total average of 17·1 cm.

It is evident, however, that this variation is as likely to occur in a series of short English skulls as in a series of long ones.

Scaphocephaly.

This abnormality is singularly common in the Hythe skulls, occurring in about 6·5 per cent. of them. It is, proportionally, nearly twice as common in males as in females, and does not seem to be affected by the skull being over or under forty years of age.

I have not been able to associate this condition with premature closure of the sagittal suture, though, in several cases, it co-exists with a persistent metopic suture, and then is usually more marked in the frontal region.

From a careful observation of these scaphocephalic and bathrocephalic skulls I cannot help feeling a suspicion that the condition may be accentuated by, if it is

not due to, postmortem pressure, especially when skulls are stacked in heaps. Vertical pressure would accentuate bathrocephaly while lateral pressure, when the skull is on its side, might increase scaphocephaly by pressing the lower ends of the parietals toward one another. I cannot find, however, that the scaphocephalic skulls are markedly narrower than the others, while in one or two cases, though very rarely, the two abnormalities co-exist, so that, at present, I have no proof whatever of my suspicion.

Plagiocephaly.

Plagiocephaly was found in eight cases: three males, four females and one child. In three of these its occurrence could be traced to early closure of one-half of the coronal suture, in all cases the left half. In the other examples the sutures were either not closed at all, as in the child, or all closed.

Metopism.

Altogether there are fifty-two cases of unclosed or partly closed metopic sutures in the 590 skulls—practically 9 per cent. The percentage does not appreciably differ in the two sexes.

Under twenty years of age the percentage is 20·8. Between twenty and forty it is 9·8 per cent., while over forty it is only found in 6·4 per cent.

Dr. Macdonell calls attention to the fact that the late closure of this suture allows the frontal region of the skull to broaden. I have gone into this and find that he is perfectly right, because the average frontal breadth of the metopic skulls, excluding the children, is 10·4 cm., while the average adult frontal breadth of the two sexes is 9·8 cm. There is, therefore, an average gain of 6 mm. in metopic skulls of this series, against 2 to 3 mm. in the Whitechapel series. The metopic skulls have also an average increase of 1·3 mm. in the greatest parietal breadth.

I have twice found the suture co-existing with marked post coronal depression though this is probably only a coincidence.

Mastoid Suture.

The suture on the external surface of the mastoid process, caused by the overlapping of a scale-like plate of the squamous part of the temporal bone, was seen as a perfectly evident structure in about 9 per cent. of these skulls. It is difficult, however, to give a definite percentage, since, when once the eye has become used to looking for it, traces can be found very much oftener, indeed, in nearly half the skulls examined.

Post Coronal Depression.

I only found six well marked cases of this among the 590 skulls, and am sure that, in any case, it is not nearly so common as among the London crania recorded by Macdonell: just as in his skulls the abnormality was most frequent in women, there being four female to two male instances of it.

Pterion and Epipteric Ossicle.

In those cases in which no ossicle existed the parietal bone always articulated with the alisphenoid. In all the 590 skulls I saw no example of the temporal articulating with the frontal. In one case only did the four bones meet in one point, and that was on the right side.

Fifty-five skulls out of the 590 have pterionic ossicles or epipteric bones on one or both sides (9·3 per cent.). Of these, 28 had a bone on the right side only, 11 on the left side only, while in 16 there was one on each side. It is remarkable that the proportion of epipteric bones is, in this collection, more than twice as great in females as it is in males.

I regard this marked preference of the epipteric bone for the right side and female sex as more than a mere chance, and believe that it is worth while seeking an explanation.

Occasionally, more than one epipteric bone may be present. I met with one case of three on the right side and another of three on the left. The distribution of these bones may be tabulated in the following way :—

Table 6 (Frequence of Epipteric Bones).

	Males.	Females.	Children.	Total.
Right	9	19	—	28
Left	6	5	—	11
Both sides ...	6	9	1	16
	21	33	1	55

Asterion Ossicle.

This ossicle, sometimes known as the bone of the lateral fontanelle, is found at the posterior inferior angle of the parietal bone and is not nearly so common as the epipteric. I only saw it in 20 out of the 590 skulls (3·4 per cent.). Like the epipteric bone it was nearly twice as common, proportionally, in females as in males, and was also rather more common on the right than on the left side, though, as it was usually bilateral, this was not so apparent as in the former bone.

Table 7 (Frequence of Asterion Ossicle).

	Males.	Females.	Children.	Total.
Right	2	4	0	6
Left	1	0	0	1
Both sides ...	6	7	0	13
	9	11	0	20

Bregmatic Ossicle.

The bregmatic ossicle (*os bregmæ*, *os antiepilepticum*, interfrontal bone) was found six times, three times in each sex. It was, therefore, present in about 1 per cent., which is about the same frequency as in the Whitechapel skulls though less than in those of the Moorfield series, where it was found in nearly 3 per cent. Taking the three series it may be said, provisionally, to be present once in about 75 English skulls.

The Supra-occipital Region.

The possible subdivisions of the supra-occipital bone are very numerous and no account which I have come across is sufficient to classify all the changes which are rung in this collection. The best account of the various ossicles which I have seen is that by Professor Hepburn of Cardiff (*J. Anat. and Phys.*, Vol. 42, p. 88), and my thanks are due to him for specially directing my attention to this region.

As he points out, the occipito-interparietal suture which sometimes divides the membranous from the cartilaginous part of the supra-occipital is above the superior curved line, sometimes by more than half an inch, but it always seems to start laterally from the asterion.

Remains of this suture are sometimes found, and are usually symmetrical. They run for an inch or two toward the mid-line.

That part of the supra-occipital bone which is above this occipito-interparietal suture, that is to say, the interparietal bone, may be divided by sutures into a median *os pentagonale* and two lateral *ossa triangularia*. These have been excellently demonstrated in the photographs of some of Macdonell's Moorfields and Whitechapel crania, and are marked O.P. and O.T., respectively, in his accompany ingdiagram. The sutures between any of these may be obliterated or any one or two of them may be united with the cartilaginous part of the supra-occipital below.

The apex of the supra-occipital bone may be separate and so may form a lambdoid ossicle (L.O.). This varies very greatly in size, but never, as far as I have seen, encroaches on the area of the *ossa triangularia*. It, in its turn, may be divided into right and left halves, though not always symmetrically; or it may be divided transversely into anterior and posterior parts. To still further complicate the matter the *os pentagonale* may be divided into lateral halves, of which only one may remain separate.

In one case a small wormian bone was found in the posterior part of the sagittal suture, quite distinct from the various occipital elements, but likely to be mistaken for one of them. This may be a purely fortuitous occurrence, but if it occurs again, it might be convenient to speak of it as the post sagittal ossicle.

The possible combinations of these various bones may be very numerous, bu practically I met with thirteen among the Hythe skulls.

They are as follows:—

1. Complete interparietal bone (composed of the fused *os pentagonale*, *ossa triangularia* and lambdoid ossicle). 1 ♀.
2. *Os pentagonale* alone separate. 3 (2 ♂ 1 child).
3. *Os pentagonale* and one *os triangulare* separate. 1 ♂ (L. side).
4. Lateral half of *os pentagonale* alone separate. 1 ♀ (L. ½).
5. Symmetrical *ossa triangularia* alone separate. 3 ♂.
6. Right *os triangulare* alone separate. 2 (1 ♂ 1 ♀).
7. Left *os triangulare* alone separate. 2 ♂.
8. Lateral remnants of parieto—interparietal suture. 4 (3 ♂ 1 ♀).
9. Lambdoid ossicle alone separate. 13 (11 ♂ 1 ♀ 1 child).
10. Bilateral lambdoid ossicles. 2 ♀.
11. Lateral half of lambdoid ossicle alone separate. 1 ♂ (R. ½).
12. Lambdoid ossicle divided transversely into anterior and posterior parts. 1 ♂.
13. Post sagittal ossicle. 1 ♀.

Odontoid Facet.

A facet in the anterior margin of the *foramen magnum*, for articulation with the odontoid process of the axis, was found six times, four being males and two females.

Paroccipital Process.

Paroccipital processes were only seen twice. In one case, a male, they were bilateral, while in the other, a female, the process was only present on the left side. In neither case were they long enough to articulate with the transverse process of the atlas.

Conclusions.

The evidence at my disposal leaves me little doubt that this series of skulls belonged to Kentish men, most of whom lived in the fourteenth and fifteenth centuries; that the skulls and other bones were exhumed, according to the mediæval custom, and stacked in the vault or processional way. They are skulls remarkable for their shortness, though of good breadth and height, and in many of them the occiput is nearly vertical. They more closely resemble the Bavarian, or a combination of the Bavarian and Würtemberg skulls, the measurements of which are given for comparison, than they do the Whitechapel or Moorfields crania. They entirely fail to substantiate the theory which Dr. Macdonell advances that, during the last two or three centuries, a marked change has been going on in the shape of English skulls; that their length has been decreasing while their breadth has increased.

As far as we know, neither Dr. Macdonell nor I have any right to assume that our series are representative of English skulls as a whole. He has shown most

successfully what the skull of the seventeenth century Londoner was like. I have tried to show what the East Kent man's skull was like a couple of centuries earlier.

Neither of us has done anything more. We are still in ignorance of the skull shapes of other parts of England in the past, and, until we can get some more long series of measurements taken by people with some experience, we had much better realize this fact.

MALES.

No.	No. at Hythe.	Ophryo-maximal length.	Glabello-maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
1	4	168	171	143	100	140	122	851	833	
2	5	179	179	150?	97	131	—	838	732	Metopic. Small lambdoid ossicle.
3	6	175	176	136	90	133	117	775	760	Slightly bathrocephalic with wormian bones.
4	14	168	171	140	101	126	117	833	750	Scaphocephalic.
5	15	177	177	144	100	134	118	814	757	Metopic.
6	18	175	178	135	98	125	112	771	714	Asterion ossicle on right side.
7	36	170	172	144	102	129	118	847	759	
8	45	177	175	153	104	144	129	864	814	Symmetrical *ossa triangularia* in occipital.
9	49	177	180	147	107	144	127	831	814	Epipteric bone on right side. Some bathrocephaly without wormian bones.
10	60	170	170	141	100	124	118	799	729	
11	61	183	184	139	95	141	125	760	770	Scaphocephalic. Bathrocephalic. Lambdoid ossicle.
12	83	172	171	150	98	127	120	872	738	Epipteric bone on left side.
13	100	167	170	142	94	125	112	850	749	
?14	101	171	170	142	93	135	125	830	789	
15	102	166	167	151	98	133	125	910	801	
16	104	187	185	154	109	—	—	824	—	Metopic. *Os pentagonale* in occipital.
17	112	180	183	142	95	128	112	789	711	Scaphocephalic.
18	113	170	172	141	100	138	122	829	812	
19	114	181	180	149	103	138	129	823	762	
20	120	172	172	144	98	135	123	837	785	
21	132	182	183	140	99	126	116	769	692	Metopic. Depression just behind bregma. Palatine torus.
22	155	183	183	144	98	135	122	787	738	Bathrocephalic with wormian bones.
23	161	180	180	131	95	131	120	728	728	Scaphocephalic.
?24	171	172	171	143	98	140	120	831	814	
25	173	169	172	143	104	128	120	846	757	
26	175	181	181	145	94	137	123	801	757	Bathrocephalic without wormian bones. Epipteric bone on right side.
27	178	183	183	142	93	129	119	776	705	
28	188	187	188	141	92	137	119	754	733	Scaphocephalic.
29	189	185	187	150	97	135	—	811	730	Metopic. Small lambdoid ossicle.
30	192	184	185	143	100	139	119	777	755	
31	197	177	179	134	94	127	114	757	718	Markedly scaphocephalic. Epipteric bone on left side.
32	207	176	179	143	99	140	122	813	795	
33	209	179	183	147	101	133	126	821	743	
34	210	174	176	138	98	129	—	793	741	
35	214	166	167	139	98	132	115?	837	795	

MALES—*continued.*

No.	No. at Hythe.	Ophryo-maximal length.	Glabello-maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
36	215	195	197	146	95	130	121	749	667	
37	217	168	169	147	100	133	123	875	792	Epipteric bone on right side.
38	221	183	183	138	97	132	119	754	721	
39	223	173	177	139	102	145	126	803	838	Scaphocephalic.
40	225	177	178	139	96	132	125	785	746	Epipteric bone on left side.
41	226	167	170	127	95	128	111	760	766	Scaphocephalic.
42	227	172	176	134	87	124	108	779	721	
43	233	181	182	140	103	135	117	773	746	
44	237	170	171	143	93	129	118	841	759	
45	238	178	182	145	92	134	—	815	753	
46	244	192	195	147	106	144	125	766	750	Plagiocephalic without closure of coronal suture.
47	252	190	190	151	—	142	130	795	747	Bathrocephalic with wormian bones.
48	254	189	188	141	105	129	121	746	683	
49	256	181	184	140	97	128	111	773	707	
? 50	263	173	172	145	95	136	118	838	786	Bathrocephalic. Large *os triangulare* on left side.
51	264	179	181	140	102	137	122	782	765	
? 52	269	164	163	133	93	130	112	811	793	
53	270	179	179	152	107	134	122	849	749	Metopic.
54	271	181	181	144	100	128	116	796	707	
55	273	164	164	137	97	125	113	835	762	
56	275	179	182	142	99	131	119	793	732	
57	277	171	170	150	95	129	123	877	754	
58	283	181	185	145	98	142	124	801	785	
59	288	178	179	147	102	133	116	826	747	
60	292	171	173	131	93	126	111	766	737	Half lambdoid ossicle on right side of lambda.
61	294	176	179	142	99	128	114	807	727	Bathrocephalic.
62	297	172	172	133	95	130	114	773	756	
63	301	178	178	142	101	139	127	798	781	
64	305	176	178	138	97	133	116	784	756	
65	308	183	184	150	104	135	123	820	738	
66	320	176	176	148	100	138	128	841	784	Slightly scaphocephalic. Epipteric bone on each side.
67	321	170	171	138	102	130	118	812	765	
68	329	173	172	144	97	132	118	832	763	Asterion ossicle on each side Palatine torus.
69	340	183	185	148	102	138	125	809	754	
70	342	176	178	131	97	129	112	744	733	Bathrocephalic without wormian bones.
71	345	178	178	143	94	130	120	803	730	
72	346	179	179	148	100	137	125	827	765	Slightly bathrocephalic. Asterion ossicle on each side.
73	347	181	182	143	99	129	119	790	713	
74	358	175	176	148	87	132	120	846	754	
75	363	177	177	139	104	135	119	785	763	
76	368	178	181	139	102	138	119	781	775	
77	372	189	189	141	102	131	122	746	693	
78	386	160	160	140	95	124	116	875	775	
? 79	387	167	166	138	96	135	120	826	808	Slight palatine torus. Epipteric bone on right side. Paroccipital process on each side.
80	388	173	173	150	99	130	126	867	751	Slight plagiocephaly without obliteration of sutures.
81	389	173	174	145	95	131	120	838	757	Epipteric bone on left side.
82	392	170	173	138	99	136	119	812	800	Odontoid facet. Palatine torus.

MALES—*continued.*

No.	No. at Hythe.	Ophryo-maximal length.	Glabello-maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
83	395	176	176	136	98	132	118	773	750	Metopic. Scaphocephalic.
84	397	181	181	150	102	130	120	829	718	*Os pentagonale* and left *os triangulare.*
85	400	169	172	140	97	132	115	828	781	*Os bregmæ.* Bathrocephaly with wormian bones.
86	405	179	178	149	104	141	128	832	788	Epipteric bone on each side.
87	406	171	174	142	97	141	121	830	825	Pterion comes to a point on right side.
88	413	173	173	148	102	133	121	855	769	Metopic.
89	415	177	177	148	97	136	123	836	768	
90	416	179	181	140?	98	125	119	782	698	Metopic.
91	423	187	188	145	108	135	128	775	722	Bathrocephaly with wormian bones.
92	426	188	188	142	95	139	118	755	739	Asterion ossicle each side.
93	427	186	185	145	105	141	128	780	758	Asterion ossicle left side. Small lambdoid ossicle.
94	433	174	176	141	96	136	123	810	782	
95	437	168	169	143	91	126	117	851	750	
96	439	182	184	144?	104	129	115	791	709	Epipteric bone on left side.
97	441	173	173	145	100	136	124	838	786	Depression behind bregma.
98	442	173	178	142	98	130	116	821	751	
99	452	173	175	145	95	119	115	838	688	Bathrocephaly with wormian bones. Left *os triangulare.*
100	453	170	171	131	97	127	111	771	747	Scaphocephalic.
101	591	173	177	151	107	140	122	873	809	
102	454	164	166	142	101	125	116	866	762	
103	455	173	175	131	101	131	116	757	757	
104	461	168	167	141	104	129	120	839	768	
105	471	171	173	134	97	132	111	784	772	Lambdoid ossicle.
?106	475	168	168	143	92	122	116	851	726	
107	478	173	177	133	89	133	118	769	769	Bathrocepalic with wormian bones and lambdoid ossicle.
108	484	169	173	136	95	132	116	805	781	
109	485	185	186	137	96	125	117	741	676	Scaphocephalic. Epipteric bone on right side.
110	487	179	180	133	95	124	112	743	693	
111	496	166	168	146	102	129	115	880	777	Asterion ossicle each side. Interparietal suture near asterion each side.
112	503	178	179	140	95	131	119	787	736	Bathrocephaly without wormian bones.
113	510	175	178	133	93	125	113	760	714	
114	521	180	183	144	103	135	116	800	750	
115	525	186	185	161	107	—	—	866	—	Metopic. Epipteric bone on right. *Os triangulare* on right.
116	544	166	171	140	94	128	119	843	771	Odontoid facet.
117	548	171	172	147	101	134	117	860	784	
118	555	182	183	140	95	126	—	769	692	Scaphocephalic. Epipteric bone left.
?119	559	173	171	150	102	134	—	867	775	Vestige of interparietal suture near asterion on each side.
120	565	172	174	142	95	137	—	826	797	Two lambdoid ossicles (antero-posterior).
121	568	185	183	147	94	—	—	795	—	Bathrocephalic with lambdoid ossicle and other wormian bones in lambdoid suture.
122	575	167	172	146	98	130	116	874	778	
123	576	171	171	146	100	132	118	854	772	

MALES—*continued.*

No.	No. at Hythe.	Ophryo-maximal length.	Glabello-maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
124	578	175	—	154	—	137	128	880	783	
125	589	184	184	158	108	151	136	859	821	
126	7	181	182	138	100	131	117	762	724	Metopic.
127	9	186	186	147	104	—	—	790	—	
128	12	176	178	136	92	139	125	773	790	Odontoid facet. Slightly scaphocephalic.
129	13	182	186	147	103	125?	121	808	687?	
130	16	182	184	147	97	—	118	808	—	
131	17	180	181	140	96	129	119	778	717	
132	19	178	182	151	102	—	—	848	—	
133	22	179	180	147	96	138	—	821	771	
134	23	185	184	157	109	138	120	849	746	Metopic.
135	27	175	177	141	97	135	120	806	771	
136	28	182	183	151	—	132	123	830	725	
137	29	170	173	144	98	137	123	847	806	
138	30	175	179	144	103	137	120	823	783	
139	32	190	192	146	—	135	—	768	711	Metopic suture open externally above.
140	35	181	181	139	103	138	123	768	762	Slightly bathrocephalic without wormian bones.
141	37	182	184	145	—	144	120	797	791	Scaphocephalic.
142	38	172	173	143	—	135	123	831	785	
143	41	187	189	143	107	143	130	765	765	Slightly bathrocephalic with wormian bones.
?144	42	180	178	147	107	132	124	817	733	
145	43	175	175	151	103	134	121	863	766	
146	46	182	182	154	103	136	128	846	747	
147	48	190	192	147	95	135	122	774	711	
148	50	167	169	147	101	136	123	880	814	
149	51	184	187	144	103	142	123	783	772	Bathrocephalic with wormian bones.
150	53	184	188	147	107	142	128	803	776	
151	55	173	173	147	101	138	125	850	798	
152	56	190	192	144	99	134	121	758	705	Symmetrical *ossa triangularia* in occipital region.
153	57	179	179	146	106	147	127	816	821	
154	58	185	187	148	105	140	126	800	757	
?155	59	179	177	143	107	138	122	799	771	
156	63	167	170	145	97	142	126	868	850	
157	66	165	171	153	101	135	123	927	818	Epipteric bone on right side.
158	67	176	178	149	101	—	120	847	—	Bathrocepalic with wormian bones.
159	69	178	180	136	97	130	117	764	730	
160	70	180	181	146	104	137	118	811	761	
161	72	179	183	142	91	—	—	793	—	
162	75	172	172	145	96	127	115	843	738	Metopic suture open externally.
163	76	175	174	141	102	124	117	806	709	Metopic suture but also open internally below.
164	77	175	176	151	105	124	125	863	709	Metopic suture open externally.
165	81	177	181	143	98	134	121	808	757	Scaphocephalic.
166	82	173	174	141	104	132	115	815	763	Scaphocephalic. Metopic suture open externally.
167	86	173	174	134	92	135	116	775	780	Diamond-shaped *os pentagonale.*
168	90	183	182	151	112	138	128	825	754	Scaphocephalic.
169	91	180	183	146	105	143	124	811	794	
170	93	177	179	144	100	130	116	814	734	Bathrocephalic with wormian bones.
171	94	192	192	143	100	142	126	745	740	Bathrocephalic with wormian bones. Scaphocephalic.
172	95	170	172	149	102	130	121	876	765	

MALES—*continued.*

No.	No. at Hythe.	Ophryo-maximal length.	Glabello-maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
173	96	177	178	147	99	132	119	831	746	Bathrocephalic.
174	97	192	194	148	100	128	122	771	667	
175	98	190	192	141	104	—	122	742	—	
176	99	183	185	142	97	140	119	776	765	
? 177	103	179	178	143	102	125	110	799	698	Metopic.
178	105	185	188	153	101	135	119	827	719	Traces of metopic suture externally.
179	106	172	173	161	111	138	129	936	802	
180	109	187	192	141	93	126	109	754	674	
181	111	163	166	142	99	127	116	871	779	
182	121	184	184	149	106	137	124	810	745	
183	122	164	169	142	107	131	—	866	799	
184	125	174	177	151	94	126	119	868	724	
185	128	176	178	145	96	134	120	824	761	Bathrocephalic with wormian bones.
186	134	179	180	147	105	137	125	821	765	Bathrocephalic with wormian bones.
187	138	188	189	141	99	134	119	750	713	
188	140	183	187	136	98	134	118	743	732	
189	158	180	181	135	96	125	122	750	694	Epipteric bone on right side.
190	160	174	175	136	98	143	124	782	822	
191	163	190	191	141	101	128	126	742	674	Bathrocephalic.
192	165	170	170	150	101	136	127	882	800	Epipteric bone on each side.
193	166	176	177	141	95	137	122	801	778	
194	168	177	178	147	101	135	121	831	763	
195	172	180	181	143	98	135	123	794	750	Scaphocephalic.
196	174	174	177	145	103	142	—	833	816	
197	179	178	176	146	94	135	125	820	755	
198	182	182	184	141	99	138	125	775	758	Epipteric bone on each side.
199	183	185	189	147	101	134	123	795	724	
200	185	185	186	147	103	136	123	795	735	
201	190	175	176	150 ?	106	133 ?	120	857 ?	760 ?	Metopic suture open externally.
202	201	171	171	141	98	140	120	825	819	
203	201A	177	178	143	107	138	121	808	780	Epipteric bone each side. Small lambdoid ossicle.
204	203	178	183	144	103	127	119	809	713	
205	204	176	178	144	105	138	125	818	784	Scaphocephalic.
206	218	185	185	146	108	142	128	789	768	
207	222	187	189	147	97	133	124	786	711	
208	224	171	173	153	105	136	127	895	795	
209	228	170	172	142	98	133	116	835	782	Trace of interparietal suture near asterion.
210	229	176	177	143	101	139	126	813	790	
211	231	183	185	141	98	134	117	770	732	
212	234	173	177	128	92	135	120	740	780	
213	236	180	179	146	103	136	122	811	756	Metopic suture open in upper half externally, in upper quarter internally. *Os bregmæ*. Right ossicle of asterion.
214	239	173	178	146	100	133	123	844	769	Metopic suture open in lower half externally.
215	240	178	177	144	96	137	123	809	770	
216	241	173	176	137	98	134	121	792	775	
217	242	179	183	145	105	138	122	810	771	
218	243	181	183	141	101	140	123	779	773	Slightly bathrocephalic with wormian bones.
219	245	181	184	—	102	132	—	—	729	
? 220	246	169	169	143	97	130	119	846	769	
221	247	172	177	144	101	136	127	837	791	

MALES—*continued.*

No.	No. at Hythe.	Ophryo-maximal length.	Glabello-maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
222	248	173	177	—	108	142	—	—	821	
223	249	180	180	150	103	143	132	833	794	
224	250	191	194	142	96	140	131	743	733	Bathrocephalic without wormian bones.
225	251	184	186	157	107	144	125	853	783	Plagiocephalic. Sutures all closed inside.
226	259	173	174	150	104	137	120	867	792	
227	261	169	175	134	92	131	118	793	775	
228	266	183	187	146	98	142	125	798	776	Scaphocephalic.
229	274	170	174	137	92	131	120	806	771	
230	279	182	181	152	102	131	118	835	720	
231	280	171	174	142	96	120	108	830	702	
232	293	184	186	139	99	131	120	755	712	
233	304	180	181	152	104	140	130	844	778	
234	309	181	181	140	94	144	122	773	796	
235	311	177	176	139	101	134	121	785	757	
? 236	312	175	174	135	103	126	118	771	720	
237	300	180	183	147	103	141	123	817	783	
238	299	182	184	141	99	137	122	775	753	
239	314	174	175	146	94	130	123	839	747	
240	315	173	172	141	96	132	120	815	763	Asterion ossicle on right side.
241	316	167	171	144	101	131	117	862	784	
242	319	179	183	153	105	137	126	855	765	
243	324	183	181	147	104	—	130	803	—	
244	331	177	178	142	101	145	127	802	819	
245	334	182	181	140	102	125	122	769	687	
246	341	171	175	141	98	135	119	825	789	Some reddish hair found on occiput.
247	349	180	182	141	98	125	112	783	694	Metopic suture open externally and below internally. Asterion ossicle on each side.
248	349A	176	181	145	99	138	122	824	784	
? 249	352	172	171	146	98 ?	128	117	849	744	
250	354	171	173	145	97	128	118	848	749	
251	355	174	175	141	98	137	121	810	787	
252	356	186	188	139	95	128	119	747	688	Scaphocephalic.
253	357	175	174	154	109	140	131	880	800	
254	359	165	167	142	95	137	122	861	830	
255	364	175	177	148	99	135	125	846	771	
256	365	182	186	139	100	132	120	764	725	
257	369	171	173	134	96	128	115	784	749	Palatine torus.
258	373	179	182	150	89	138	125	838	771	
259	375	193	195	145	97	128	119	751	663	Bathrocephalic with wormian bones.
260	381	183	183	135	94	127	115	738	694	
261	383	183	—	146	101	—	—	798	—	
262	385	175	178	152	104	138	123	869	789	Bathrocephalic with wormian bones.
263	388A	174	177	147	101	137	124	845	787	
264	390	182	186	142	99	133	124	780	731	Slightly bathrocephalic. Diamond-shaped lambdoid ossicle.
265	391	167	169	138	90	129	115	826	772	Slightly bathrocephalic.
266	393	185	186	139	100	135	123	751	730	Scaphocephalic. Slightly bathrocephalic.
267	394	176	182	142	100	138	123	807	784	
268	396	165	169	138	94	131	122	836	794	Epipteric bone on each side.
269	399	184	188	146	106	133	124	793	723	
270	401	176	179	152	95	132	123	864	750	
271	407	—	—	146	—	132	—	—	—	Bathrocephalic with wormian bones. Lambdoid ossicle.
272	410	182	182	143	105	141	120	786	775	Asterion ossicle on each side.
273	411	167	170	144	104	136	119	862	814	

MALES—*continued.*

No.	No. at Hythe.	Ophryo-maximal length.	Glabello-maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
274	412	183	187	144	94	134	121	787	732	Slightly bathrocephalic.
275	414	179	—	130	99	134	119	726	749	
276	422	169	171	144	97	132	118	852	769	
277	429	182	186	142	103	140	124	780	769	
278	430	177	181	138	96	131	118	780	740	Scaphocephalic.
279	431	171	171	146	106	131	120	854	766	Metopic suture partly open above and below externally; closed internally.
280	435	176	179	150	103	141	127	852	801	Epipteric bone on right side.
281	436	180	179	142	96	131	123	789	728	
282	438	178	180	145	97	128	119	815	719	
283	440	175	180	153	105	136	129	874	777	Scaphocephalic.
284	443	178	183	143	96	133	119	803	691	
285	444	170	174	146	91	131	119	859	771	
286	445	178	180	136	102	128	118	764	719	
287	446	180	183	150	105	136	119	833	756	
288	447	170	171	136	102	129	116	800	759	Scaphocephalic. Bregmatic ossicle.
289	448	170	171	141	98	135	122	829	794	Scaphocephalic.
290	450	170	173	134	94	130	116	788	765	Scaphocephalic. Lambdoid ossicle.
291	451	173	173	146	102	130	119	844	751	Odontoid facet.
292	457	183	181	149	97	128	122	814	699	Asterion ossicle on each side.
293	458	171	173	152	96	137	119	889	801	
294	459	175	178	142	97	128	116	811	731	
295	463	185	185	142	101	—	124	768	—	Bathrocephaly with wormian bones.
296	469	186	188	135	94	—	121	726	—	
297	473	180	—	142	104	126	115	789	700	Metopic suture partly open above and below externally; closed internally.
298	477	187	—	145	105	131	119	775	701	
299	495	177	178	142	100	132	120	802	746	
300	504	177	177	144	101	—	—	814	—	
301	508	175	178	132	93	129	112	754	737	Scaphocephalic.
302	514	172	173	142	94	126	117	826	733	
303	515	183	186	147	94?	—	—	803	—	
304	529	165	169	135	92	120	107	818	727	Scaphocephalic.
305	530	178	179	139	100	—	—	781	—	Large healing wound on left parietal.
306	531	170	173	142	—	—	—	835	—	Symmetrical *ossa triangularia* in occipital.
307	538	179	181	136	96	132	—	760	737	Trace of right interparietal suture near asterion.
308	539	187	192	140	102	136	122	749	727	
309	540	187	191	142	101	135	121	759	722	Bathrocephalic with wormian bones.
310	541	186	188	141	104	—	—	758	—	
311	542	171	175	142	103	130	114	830	760	
312	545	182	186	144	99	129	117	791	709	
313	549	185	187	141	103	130	117	762	703	
314	551	187	190?	142	107	—	113	759	—	
315	552	184	185	140	104	132	—	761	717	
?316	567	175	175	139	105	133	118	794	760	
317	570	—	—	141	108	130	—	—	—	
318	571	175	178	151	105	140	127	865	800	
319	572	174	177	140	102	123	115	805	707	
320	573	171	170	145	98	138	—	848	807	Metopic.
321	577	167	168	142	100	—	—	850	—	
322	582	172	174	146	99	133	—	849	773	
323	583	177	176	139	94	125	117	785	706	
324	585	174	174	136	104	134	119	782	770	
325	587	174	174	154	104	140	127	885	805	
326	588	184	184	153	100	135	125	832	734	

FEMALES.

No.	No. at Hythe.	Ophryo maximal length.	Glabello maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
327	2	171	173	140	91	121	112	819	708	
328	8	173	174	141	94	127	115	815	734	Asterion ossicle on each side.
329	11	163	164	137	95	123	115	840	755	
330	20	172	172	150	97	132	120	872	767	
331	21	172	173	134	96	124	111	779	721	
332	24	162	163	145	—	122	114	895	753	
333	26	170	169	137	94	123	116	806	724	
334	33	170	170	140	96	132	120	824	776	
335	52	174	174	136	93	124	119	782	713	
336	73	174	174	144	98	131	120	828	753	
337	65	171	172	140	98	117	112	819	684	
338	74	179	177	139	106	125	113	777	698	
?339	25	181	184	151	105	137	125	834	757	
340	107	162	163	136	94	120	107	840	741	Epipteric bone on right side.
341	108	164	163	130	95	132	113	793	805	Epipteric bone on right side.
342	129	167	171	144	96	126	111	862	754	
343	135	164	165	137	95	125	112	835	762	Epipteric bone on right side.
344	139	177	177	152	97	124	119	859	701	
345	141	177	176	134	95	128	114	757	723	
346	159	169	170	141	93	136	126	834	805	
?347	164	175	176	144	96	137	122	859	701	
348	176	167	168	140	97	—	—	838	—	
?349	180	181	181	144	103	137	122	796	757	
?350	187	170	173	141	101	131	120	829	771	
351	193	170	168	146	96	124	115	859	729	
352	194	166	167	133	95	125	114	801	753	
?353	199	180	181	145	95	132	119	806	733	
354	200	172	172	145	94	130	115	843	756	
355	206	169	168	147	100	140	119	870	828	
356	213	171	173	147	92	129	119	860	754	
?357	216	176	178	134	98	132	116	761	750	
?358	272	167	168	142	96	124	115	850	743	
359	284	171	170	147	102	127	122	860	743	
360	287	170	168	135	95	125	113	794	735	
?361	289	176	179	136	100	135	123	773	767	Scaphocephalic. Bathrocephalic.
?362	291	173	173	149	109	132	120	861	763	Asterion ossicle on right side.
363	302	182	182	142	90	129	114	780	709	
364	303	169	170	147	101	130	119	870	769	
?365	307	170	171	155	99	134	—	912	782	
366	310	164	166	149	100	132	125	909	805	
367	313	173	175	145	95	134	122	838	775	
?368	317	178	180	134	102	134	116	753	753	
?369	318	159	160	138	92	128	115	868	792	
370	327	159	162	139	93	130	114	874	818	
371	335	180	180	141	95	127	114	783	706	
372	337	176	176	147	103	129	114	835	733	Bathrocephalic. with wormian bones.
373	338	177	177	141	97	130	119	797	734	
374	348	175	176	141	101	138	119	806	789	
375	350	166	166	141	96	128	118	849	771	
376	353	170	170	135	95	125	109	794	735	
377	360	167	168	137	94	120	119	820	719	Anterior part of *foramen magnum* deeply notched.
?378	362	170	173	136	94	134	120	800	788	Scaphocephalic.
379	374	170	171	138	96	134	113	812	788	
380	382	171	172	137	100	127	114	801	743	Epipteric bone on each side. Small facet for odontoid.
381	417	177	177	140	93	134	119	791	757	

FEMALES—*continued.*

No.	No. at Hythe.	Ophryo maximal length.	Glabello maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
?382	418	173	175	135	96	131	121	780	757	Bilateral wormian ossicle.
383	424	170	171	141	92	135	121	829	794	
384	434	162	161	142	92	123	119	877	759	
385	220	180	180	134	94	128	115	744	711	Perfect interparietal bone.
386	456	175	178	135	98	133	117	771	760	
387	468	170	171	133	101	127	113	782	747	
388	474	175	174	136	103	132	113	777	754	
389	479	181	180	142	108	137	125	785	757	
390	490	174	174	142	95	131	117	816	732	
391	493	170	171	135	98	121	111	794	—	
392	498	164	167	144	97	122	115	878	744	Epipteric bone on right side.
393	509	172	172	142	98	135	—	826	785	
394	519	174	175	145	94	126	120	833	724	
395	524	178	178	142	95	130	—	798	730	
396	526	161	164	146	101	130	—	907	807	
397	527	171	171	145	95	135	123	848	789	
398	528	170?	168?	138	94	120	113	812	706	
?399	532	175	177	141	97	123	—	806	703	
400	537	169	168	143	97	125	119	846	740	
401	550	170	173	141	97	123	114	829	724	
402	564	164	165	142	90	—	115	866	—	
403	566	173	173	138	—	—	—	798	—	
?404	569	165	167	139	101	125	112	842	758	
405	584	171	169	144	96	134	123	842	784	
406	497	170	171	137	92	123	110	806	724	
407	1	173	172	142	92	130	—	821	751	
408	3	176	174	143	97	127	—	813	722	
409	10	169	170	131	92	131	115	840	775	
410	31	170	171	145	97	127	114	853	747	
411	44	164	167	135	96	124	112	823	756	Epipteric bone on right side.
412	47	170	171	139	102	129	114	818	759	Epipteric bone on right side. Bathrocephalic without wormian bones.
413	62	168	168	139	100	131	116	827	780	Epipteric bone on right side.
414	64	178	178	141	96	121	113	792	680	
415	68	168	169	139	96	129	117	827	768	
416	71	164	163	135	96	122	112	823	744	
417	79	169	169	142	99	117	114	840	692	Metopic suture open externally and internally. Post coronal depression.
418	85	171	172	139	93	126	108	813	737	
419	87	174	174	133	92	123	112	764	707	
420	92	174	174	142	99	130	122	816	747	Metopic. Scaphocephalic.
421	100A	174	173	133	94	137	125	764	787	Epipteric bone on each side.
422	110	172	171	144	97	131	116	837	762	
423	117	169	168	133	92	130	117	787	769	
424	119	171	172	143	97	130	117	836	760	Scaphocephalic.
425	123	170	171	141	96	126	117	829	741	Slightly bathrocephalic with wormian bones.
426	124	168	167	143	95	117	112	851	696	Metopic. Epipteric bone on left side.
427	126	169	168	136	97	127	113	805	751	Asterion ossicle on each side.
428	130	172	172	148	95	131	115	860	762	
429	131	170	170	141	93	131	119	829	771	Slightly bathrocephalic without wormian bones.
430	136	175	175	130	94	133	118	743	760	Scaphocephalic. Epipteric bone on right side.
431	142	168	168	135	100	127	111	804	756	
432	144	174	174	144	98	132	117	828	757	
433	146	171	173	131	91	120	108	766	702	Asterion ossicle on right.

FEMALES—*continued.*

No.	No. at Hythe.	Ophryo maximal length.	Glabello maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
434	154	172	172	137	99	124	112	797	721	Epipteric bone on left side. Slightly scaphocephalic.
435	157	166	167	132	102	118	110	795	711	Metopic. Bathrocephalic with wormian bones.
436	162	165	167	141	90	121	112	855	733	
437	167	166	165	139	93	127	116	837	765	
438	170	166	165	138	96	131	117	831	789	
439	181	166	165	136	93	125	—	819	753	
440	184	172	174	144	99	127	118	837	738	
441	186	170	170	133	91	124	117	782	729	
442	191	167	167	140	99	135	116	838	808	
443	198	174	175	148	100	130	121	851	747	
444	205	179	178	140	93	127	114	782	709	
445	208	187	189	142	102	136	123	759	727	
446	211	158	156	134	90	126	115	848	797	
447	212	170	169	140	90	126	114	824	741	Epipteric bone on right side.
448	219	168	168	135	95	123	113	804	732	
449	232	179 ?	—	147	97	134	120	821	749	
450	235	161	161	130	98	125	110	807	776	
451	255	174	172	142	100	130	116	816	747	Metopic suture open externally and internally.
452	257	178	179	137	92	128	113	770	719	
453	258	172	172	144	96	130	115	837	756	Epipteric bone on left side.
454	262	170	169	134	92	132	118	788	776	
455	278	167	167	142	93	130	118	850	778	Epipteric bone on right side.
456	281	174	175	137	87	136	117	787	782	Odontoid facet.
457	253	166	171	140	92	139	121	843	837	Plagiocephalic without obliteration of sutures. Epipteric bone on left side.
458	285	170	169	134	92	132	118	788	776	Metopic.
459	286	188	185	138	98	—	118	734	—	Metopic. Slightly scaphocephalic in frontal region.
460	265	171	172	146	98	134	122	854	784	Epipteric bone on each side.
461	268	170	170	135	98	130	118	794	765	Metopic. Scaphocephalic. Small lambdoid ossicle.
462	276	167	166	131	96	128	119	784	766	Epipteric bone on each side. Asterion ossicle.
463	296	170	173	139	93	131	119	818	771	
? 464	298	184	185	137	104	122	114	745	663	Metopic. Bathrocephalic. Asterion ossicle on right side. Epipteric bone on each side.
465	306	167	168	137	98	125	112	820	749	Small bilateral lambdoid ossicles. Asterion ossicle on right side.
466	322	177	178	133	90	130	111	751	734	
467	326	164	164	144	97	128	117	878	780	
468	330	163	163	145	90	123	112	890	755	Large bregmatic ossicle.
469	323	165	166	146	96	126	121	885	764	
470	325	164	164	144	96	134	118	878	817	Asterion ossicle on each side.
471	332	183	184	130	97	124	113	710	678	Scaphocephalic.
472	333	179 ?	—	144	100	—	121	804	—	
? 473	366	174	175	139	99	119	108	799	684	
? 474	367	174	175	141	100	126	123	810	724	
475	336	172	172	143	97	130	120	831	756	Epipteric bone on right side.
476	339	171	172	138	93	130	114	807	760	Metopic.
477	351	177	176	145	98	128	119	819	723	
478	370	186	186	141	103	134	122	758	720	Upper half metopic suture open.
479	371	173	171	144	96	124	115	832	717	
480	361	156	155	149	90	122	119	955	782	

FEMALES—*continued.*

No.	No. at Hythe.	Ophryo maximal length.	Glabello maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
481	376	168	167	147	96	130	119	875	774	Metopic.
482	377	167	169	140	93	—	121	838	—	
?483	379	177	180	136	96	134	119	768	757	Wormian bone in front of lambda.
484	380	175	175	132	92	127	115	754	726	
?485	384	158	159	144	88	131	119	911	829	Plagiocephalic. Left half coronal suture obliterated.
486	398	160	159	133	94	126	110	831	788	
487	402	177	178	137	93	131	119	774	740	
488	404	162	164	145	98	128	115	895	790	Paroccipital process on left side.
?489	408	166	168	138	97	123	114	831	741	
490	403	163	163	141	94	128	122	865	785	
491	409	161	159	142	100	127	115	882	789	Metopic suture closed internally in lower half. Epipteric bone on right side.
492	419	174	174	137	95	122	111	787	701	
493	420	172	172	140	98	125	115	814	727	
494	321	170	171	145	100	140	126	853	824	
?495	425	162	166	145	88	120	119	895	778	Epipteric bone on left side.
496	428	177	177	141	95	134	120	797	757	Bregmatic ossicle.
497	432	161	162	143	91	129	118	888	801	
498	449	170	166	141	99	127	116	829	747	Metopic. Postcoronal depression.
499	460	175	176	130	91	132	115	743	750	
?500	465	171	170	137	100	129	117	801	754	
501	466	177	179	134	99	128	115	757	723	
502	467	171	170	138	100	124	114	807	725	Bathrocephalic with wormian bones. Left half *os pentagonale.*
?503	462	172	174	140	92	119	110	814	692	
?504	464	174	177	151	96	124	113	868	713	
505	472	156	155	136	90	125	114	872	801	Plagiocephalic. Left half coronal suture obliterated.
506	480	182	183	145	100	129	118	797	709	Asterion ossicle on each side.
507	481	158	159	131	94	126	111	829	797	
508	482	170	170	136	96	120	109	800	706	
509	483	165	168	136	87	122	113	824	739	Three epipteric bones on right side.
510	486	176	176	138	92	126	115	784	716	One epipteric bone on right side, three on left side.
511	488	175	174	138	93	120	112	789	686	
512	489	174	173	132	93	127	107	759	730	
513	476	164	164	137	100	124	111	835	756	Epipteric bone on right side.
514	494	164	161	137	95	127	114	835	774	
?515	499	165	166	139	95	124	113	842	751	Epipteric bone on right side.
?516	500	176	177	140	95	124	—	795	705	
517	501	168	168	141	103	113	108	839	672	Odontoid facet. Post coronal depression.
518	502	168	168	133	92	124	107	792	738	
519	505	172	172	138	95	130	117	802	756	
520	506	166	168	134	90	122	113	807	735	Asterion ossicle on each side.
521	507	180	180	136	94	127	113	756	706	
522	513	157	157	139	96	121	—	874	761	
523	516	159	161	138	94	126	113	868	792	
524	517	185	182	141	108	121	115	762	654	Metopic suture open in lower half externally.
525	518	175	173	146	87	127	—	834	726	Bathrocephaly with wormian bones.
?526	522	165	167	142	96	128	116	861	776	
527	535	162	160	142	89	122	113	877	753	Metopic.
528	543	168	169	136	90	129	111	810	768	

FEMALES—*continued.*

No.	No. at Hythe.	Ophryo maximal length.	Glabello maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
?529	546	170	171	138	92	121	110	812	712	
530	547	161	161	140	92	120	114	870	745	
531	553	180	186	135	91	—	—	750	—	Plagiocephalic. Left coronal suture obliterated.
532	554	167	168	136	—	—	—	814	—	
533	556	163	163	137	93	125	110	840	767	
534	557	160	161	136	99	127	112	850	794	
535	558	175	175	141	97	137	119	806	783	
536	560	170	169	141	97	130	117	829	765	Metopic. Scaphocephalic.
537	561	160	161	139	98	122	112	869	763	
538	563	157	157	135	90	123	116	860	783	Epipteric bone on each side.
?539	574	180	—	143	95	131	118	794	728	Bathrocephalic with wormian bones.
540	579	167	166	142	98	133	120	850	796	
?541	580	178	177	137	93	129	117	770	725	Occipito interparietal suture on each side near asterion.
542	581	174	173	152	95	134	122	874	770	
?543	586	178	178	138	97	135	118	775	758	Slightly bathrocephalic with wormian bones. Epipteric bone on right side.
544	590	177	177	134	93	129	117	757	729	Bregmatic ossicle.
545	34	179	179	143	97	138	122	799	771	
?546	54	184	184	153	104	127	120	832	690	
547	80	167	170	141	97	137	120	844	820	Epipteric bone on right side. *Os triangulare* on right side.
548	137	162	164	142	97	124	115	877	766	Epipteric bone on right side. Bathrocephalic with wormian bones.
?549	143	173	173	136	96	126	111	786	728	Epipteric bone on right side.
550	169	179	180	135	100	124	117	755	693	
?551	177	175	173	142	98	135	120	811	771	
552	196	183	183	136	90	118	113	743	645	
553	78	181	181	140	107	116	115	773	641	Metopic. Post coronal depression.
554	88	172	173	140	98	127	114	814	738	Epipteric bone on right side.
555	105A	173	172	147	99	123	117	850	711	Epipteric bone on right side.
556	328	168	168	144	94	128	117	857	762	Depression at obelion.

CHILDREN UNDER 20.

No.	No. at Hythe.	Approx. age.	Ophryo maximal length.	Glabello maximal length.	Parietal breadth.	Frontal breadth.	Basi-bregmatic height.	Auricular height.	Breadth index.	Height index.	
557	520	6	154	152	145	97	126	117	935	813	
558	148	7	154	150	132	89	123	—	857	799	Four parts of occipital bone separate.
559	149	7	169	162	136	98	123	—	805	728	Metopic. Occipital complete.
560	470	7	157	156	134	98	126	—	854	803	Metopic. Occipital complete.
561	267	7	165 ?	—	138	90	—	116	836 ?	—	Occipital bone missing.
562	127	8	166	165	144	94	133	122	867	801	
563	145	8	176	176	140	92	125 ?	113	795	710 ?	Basioccipital separate from exoccipital.
564	523	8	163	161	135	88	125	114	828	767	Occipital complete.
565	84	9	162	162	138	90	113	106	852	697	Occipital complete.
566	156	9	154	148	137	94	113	107	890	779	
567	151	9	165	164	143	86	125 ?	119	867	758	Basioccipital separate from exoccipital.
568	195	9	173 ?	—	145	99	—	118	838	—	Occipital bone missing.
569	492	9	173	173	135	96	125	114	780	723	Metopic.
570	150	10	161	162	144	90	120	—	894	745	
571	153	10	158	157	141	98	123	118	892	778	
572	295	10	164	162	134	100	124	114	817	756	Metopic.
573	343	11	166	165	138	99	125	115	831	753	Metopic.
574	491	11	169	168	136	91	127	—	805	751	
575	260	12	171	172	131	91	121	107	766	708	Plagiocephalic.
576	533	12	168	165	134	96	119	111	798	708	Metopic suture open externally in lower half. Epipteric bone on each side.
577	290	12	150	149	129	86	122	110	860	813	
578	282	12	173	173	147	96	125	113	850	723	
579	152	14	160	160	134	92	126	110	838	788	Metopic.
580	344	14	163	162	143	96	129	118	877	791	*Os pentagonale.*
581	133	16	166	165	133	95	120	112	801	723	Metopic.
582	378	17	167	167	150	97	127	120	898	760	
583	89	18	179	180	138	90	132	115	771	737	
584	116	18	161	162	135	88	120	106	839	745	
585	118	18	176	175	139	98	130	117	790	739	
586	511	18	173	173	140	83	129	112	809	746	
587	512	18	172	171	141	96	123	—	820	715	
588	534	18	179	181	141	91	127	—	788	709	
589	536	18	161	164	150	91	124	115	932	770	
590	115A	19	177	177	138	—	134	120	780	757	



FIG. 1.—FEMALE SKULL: NORMA LATERALIS.

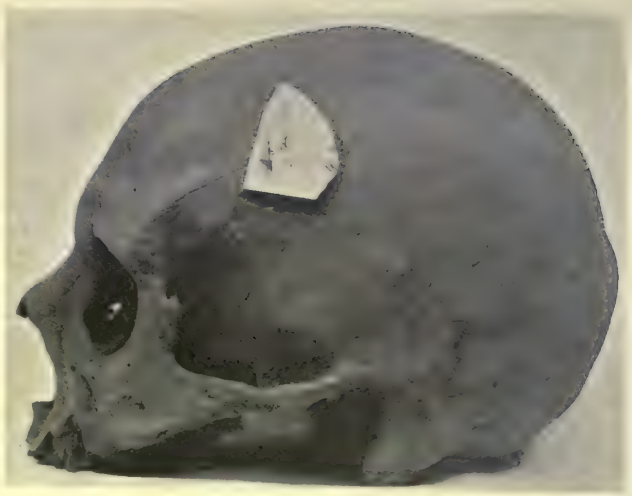


FIG. 4.—MALE SKULL: NORMA LATERALIS.



FIG. 2.—♀ NORMA OCCIPITALIS.



FIG. 3.—♀ NORMA VERTICALIS.



FIG. 5.—♂ NORMA OCCIPITALIS.

THE KURDISH TRIBES OF THE OTTOMAN EMPIRE.

By Mark Sykes.

Preface.

The materials collected in the ensuing pages are the results of about 7,500 miles of riding and innumerable conversations with policemen, muleteers, mullahs, chieftains, sheep drovers, horse dealers, carriers and other people capable of giving one first hand information. The results I fear are extremely meagre, but I hope they may prove of use to future travellers.

As hardly anything has been written on the subject in the English language heretofore, I have not been able to make a study of the Kurds from a bibliographical point of view. However, I trust that this will not detract from the interest of the work. I may add that I had among my servants on my last journey representatives from the three most important sections of the Kurds, so that I was able to obtain interpreters without any great difficulty, a matter of some importance amidst the conflicting dialects of the nomads and sedentary mountaineers.

In preparing the following list of the various tribes of the Kurdish race I have endeavoured to simplify the work of future students by marking down and cataloguing as many of the tribes as have come either directly or indirectly under my notice.

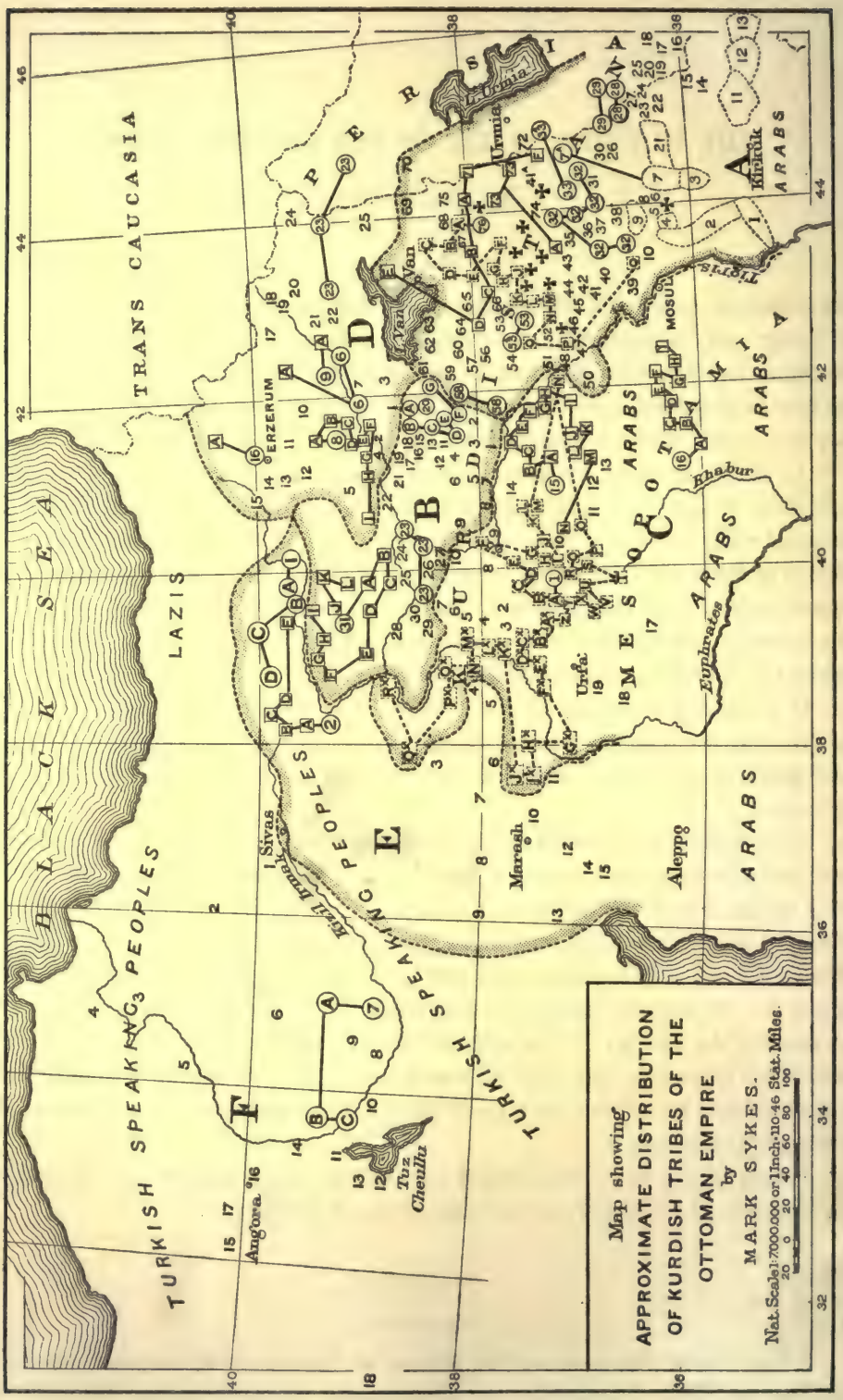
After various abortive attempts at setting them down in a manner comprehensible to any one but myself, I have decided for the purposes of this work to break up the regions inhabited by Kurds into six zones; to each of these zones a section of the catalogue is devoted, each section containing a separate enumeration. Thus in the alphabetical list a tribe will be found, as for instance the Merzigi 76B, section A. To find the position of the tribe the reader must look in zone A on the map for the number 76; he will find this number is connected to a chain of letters; the letter B in this chain will mark the spot where this tribe is to be found, in the catalogue he will find such particulars as I can supply under the number 76B in the printed section A.

Before closing this preface may I say that the zones marked on the map are not ethnological but merely a convenient form of grouping.

Section A.

Introduction.

I have chosen this zone as the first to be treated chiefly because the Kurds dwelling in it are apparently the descendants of those ancient Cordueni who


BLACK SEA
TRANS CAUCASIA
PERSIA
MESOPOTAMIA
ARMENIA
KURDISTAN
TURKISH SPEAKING PEOPLES
LAZIS
ARABS
Erzerum
Sivas
Angora
Tuz Cheulu
Urumia
Van
Mosul
Khabur
Euphrates
Aleppo
Marash
Urfa
Kirkuk
Map showing
APPROXIMATE DISTRIBUTION
OF KURDISH TRIBES OF THE
OTTOMAN EMPIRE
by
MARK SYKES.
Nat. Scale 1:7000000 or 1 Inch=110·46 Stat. Miles.

harassed Xenophon's retreat, and it is at least the theatre of the Kurds' first appearance on the stage of history. The densely populated zone is bounded on the north by Lake Van and the Armenian table land, on the west by the Tigris, and on the south by the plains of the Irak. I should imagine that the majority of its inhabitants are Kurds; however, we have a considerable foreign element in the plains, and it may be that some of the tribes mentioned in my list are not in fact Kurdish tribes but branches of other peoples who have become affiliated to the original mountain race. The foreign or at least non-Kurdish stocks may briefly be enumerated as the Arabo-Aramean population of Mossul, the pure Arameans as typified in the Nestorian and Jacobite Christians of Ain'Kawa, Akra, and Keui Sanjak, the Turkish peoples of Altyn Kiopru, Kerkuk and Erbil, and the Bedawin and Felahin Arabs on the banks of the Tigris and the plains eastward of Mossul.

The two peoples in this zone concerning whom I am completely in doubt are the Shabak No. 5 and Bejwan No. 10, and the Nestorian Christians of Hakkiari, Amadia and Zakho. The presence of the latter are denoted by a black ✠. The question as to whether these Nestorian Christians of Hakkiari, who have a tribal organization, are indigenous Kurds or fugitive Christians of Aramean stock, is I think still open; several learned Kurdish[1] notables are of opinion that the Nestorians of Hakkiari are Kurds who were converted to Christianity before the advent of Al Islam; on the other hand the Christian clergy are firmly convinced that this is not the case. Personally I suspect that both theories are in part true, and that when the Christians fled from Mossul and Irak, they took refuge with the Kurdish Christians of Hakkiari. This would make the Episcopal families new comers, just as many of the Kurdish Moslem chiefs trace their ancestry to Arabian Emirs. I regret that I was unable to obtain particulars as to the names of the Nestorian tribes, but it is to be hoped that the English Mission of the Archbishop of Canterbury will some day supply the deficiency.

With regard to the Kurds I think they may be divided into three classes. Class I.—Nos. 1, 2, 3, 4, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, who are the semi-nomads of the plains and southern hills; Class II, Nos, 21, 26, 28, 29, 30, 31, 33, 34, 35, 36, 37, 38, 40, 41A, 44, 48, 52, 53, 53A, 65, 68, 71A, 71B, 71C, 72, 73, who are the sedentary mountain tribes; Class III, the semi-nomadic mountaineers comprising the remainder of the tribes with the exception of No. 50.

As regards Class I the tribes catalogued under these figures are very similar to one another in habits and appearance. They are usually wealthy shepherds and only cultivate the ground for auxiliary purposes, though they frequently employ extraneous labour for agriculture and traffic in the produce thus obtained. They are expert smiths, weavers, and tent makers. Mentally they are far superior to the majority of Kurds, being apt to education, astute men of business and very indus-

[1] The names of these gentlemen are:—Shaykh Nasreddin of Tillu; Shaykh Sadiq, of Neheri (now dead); Shaykh Hamid Pasha of Bashkala.

trious. They live under the rule of hereditary tribal nobles, who are usually very quarrelsome, feuds and intertribal wars being common. These semi-nomads, who are known as the Baba or Baban Kurds, are noted for their chivalry, valour, and thieving proclivities; they are all fine horsemen, and expert marksmen, having of late years discarded the lance and sword in favour of the rifle. I should imagine that the great cavalry armies of the Parthians were recruited from similar tribes, as the present evolutions and tactics of these people resemble those of the troops of Surenas as described in Plutarch's *Life of Crassus*. The patron Saint of the Baban Kurds is Khalid ibn Walid, whom they hold in great reverence, saying that he converted them from Paganism and the worship of fire.

All the tribes mentioned in this class are strictly orthodox Sunni Moslems.

During the months of October, November, December, January and February, they dwell in villages in the vicinity of the numbers as marked on the map; in March they go into tents and remain in them till early in June, at which period many families from each tribe migrate to the Wazna district with their flocks; during the summer months of July, August and September, whether at Wazna or elsewhere they lay up their tents and construct bowers of green wood, in which they live until the autumn nights grow chilly, when they return to their villages. Most of the noble families of the tribes in this class intermarry with the Arabs of Mesopotamia. However, their own women are strikingly beautiful and are allowed great freedom, many of the women can ride and shoot as well as the men, but undertake no manual labour beyond making butter and performing ordinary household duties.

Class II.—The sedentary mountaineers are completely distinct in custom and dress from the Baban Kurds. They are industrious agriculturists, and cultivate every available piece of ground in the vicinity of their villages, showing great capacity in diverting and damming streams, draining and ditching for the purpose of irrigating the terraced fields in the vicinity of their villages; these fields bear crops of barley, wheat, maize, rice, and excellent tobacco. They live under the rule of tribal chiefs and like the Baban Kurds are constantly at war with one another. The men carry rifles and daggers, and are active fighters and hunters. Each village has in its centre or near it a small double bastioned block-house or castle of hewn stone, where in times of war the people take refuge for purposes of defence. The intertribal battles are often extremely bloody, six or seven men killed out of a party of twenty being not uncommon.

As regards mode of life these Kurds, though sedentary, dwell in bowers erected on the flat roofs of their houses in summer. Like the Baban Kurds their women do not veil and are well treated. Some of the tribes in this category are of opinion that they were converted from Christianity, but most of them have Pagan traditions. Among them dwell a good many Jewish families who are never maltreated, but are not permitted to carry arms or engage in tribal feuds, consequently the Jews travel on trading expeditions from tribe to tribe whether the latter are friends or enemies. Nestorian Christians dwelling amongst these tribes are occasionally

found living in a condition of vassalage, but as often as not share and own lands on an equal footing with the Moslem tribesmen.

Class III.—The remainder of the Kurds in section A are semi-nomadic mountaineers, being partly agriculturists, partly shepherds, and partly horse dealers; in dress they resemble Class II rather than Class I; they are of a thievish disposition, bloodthirsty, cowardly, and often cruel. Their women are ugly and hard worked, they usually ride donkeys or mules, and are extremely erratic in their movements. Speaking generally, they differ in appearance from Kurds of Class I and Class II, being big boned, heavily built men, of a very dark complexion. No one who saw them could imagine they were of the same origin. In their wanderings they frequently dispense with tents and shelter behind bales or reed screens. As a rule these semi-nomads are badly armed, poor in goods and of a cowardly nature. In religion they appear to have no fixed belief of any kind, and care very little for such matters, though they are counted as Moslems.

As regards No. 50, section A, the Miran, they are an exception to the above description, and the reader must look under their number for details concerning them. I would also note that in the South Irak, Wazna, and in the vicinity of Mossul, to be a nomad is considered noble; while in the mountains the word *kochar*, or shepherd, is synonymous with "savage," "ignorant" or "brutish."

1. *Daudieh.* 4,000 families. A warlike semi-nomadic tribe inhabiting the banks of the lower Zab. Noted swimmers, poor horsemen, Baban Kurds.
2. *D'sdie.* 5,000 families. A large tribe, partly composed of nomads and partly agriculturists. They intermarry freely with the Gibbur Arab women. This tribe has lost much of its wealth owing to locusts and drought. Their women are exceedingly handsome and affect a peculiar and distinctive dress, *i.e.*, blue turbans like the men, and dark heavy garments, no colour or ornaments of any kind being worn. The men are good horsemen and agriculturists, the headquarters of the tribe are on the Sultan's farm in the Kara Chok Dagh. Baban Kurds.
3. *Shaykh Bezeini.* 4,000 families. A great and warlike tribe, turbulent and fierce. Noted robbers. Great horsemen. Very intelligent, make Martini Henry rifles. Live in villages in winter, dwell in tents in the vicinity of their villages in spring. After the harvest (June) proceed to Persian frontier with their flocks. Return in September, or later if the season is hot. Dress in Persian fashion. Baban Kurds.
4. *Shaykhan.* 500 families. Completely nomadic, wealthy shepherds, pasture flocks between Tigris and both Zabs. Avow no connection with Yezidis,[1] and often camp with the Tai Arabs, with whom however they do not intermarry. Baban Kurds.
5. *Shabak.* 500 families. Sedentary, said to be Shias by some, others

[1] See No. 46, Section A.

affirm them to have a secret religion, others that they are Babis, others that they acknowledge a prophet named *Baba*.

6. *Mamund.* ? families. I know nothing of this tribe but I expect it is really a sub-tribe of the Hamawand No. II, section A.
7. *Girdi.* 6,000 families. A powerful tribe of shepherds, agriculturists and warriors, occasionally robbers. Dress in Persian fashion, very wealthy and good horsemen. They employ the Khoshnao No. 21, section A, to do agricultural work for them. They proceed to the Wazna district in summer to pasture their flocks. One section of this tribe dwelling at Ushkafsakka is well disposed to strangers, another, living about four hours west of Ain Kawa, are noted highwaymen. Baban Kurds.

A. *Girdi.* 1,200 families. These Girdi migrated from the vicinity of Girdmamik about sixty years ago; they have abandoned the use of tents in the summer and are now not to be distinguished from the surrounding mountaineers. They are industrious and wealthy. They still correspond with the mother tribe and send presents to the chief at Ushkafsakka each spring. Baban Kurds.

8. *Khalkani.* 700 families. Semi-nomadic, but unwarlike. Baban Kurds.
9. *Surchi.* 3,000 families. 1,000 of the households are complete nomads. The Surchi have no peculiarities. Baban Kurds. A small tribe of Mamakanli, see section D. Nos. 8G and 9A are attached to the Surchi, evidently they migrated southward at some time, and have become absorbed; see section A, No. 26.
10. *Bejwan.* 800 families. Speak a mixed language, apparently half Arabic, half Kurd, said by neighbours to be of Turkish origin and to be followers of Hajji Bektash.
11. *Hamawand.* 1,200 families. The most valiant, courageous, and intelligent of the Baban Kurd tribes. Splendid horsemen, crack shots, capable smiths, bold robbers, good agriculturists; such as enter the government service prove capable officials. In 1878, 600 Hamawand horsemen armed only with lances penetrated far into the Caucasus, and brought back immense spoils. The Turkish government has of late years done much to suppress this tribe's power, but the men are still famous for their prowess and intelligence, and the women for their beauty. The Hamawand intermarry freely with the Arabs, and reckon themselves of Arabian origin. Most of the Hamawand speak Arabic, their language is, however, Kurdish. Dress, partly Arab, partly Persian. Formerly they were noted lancers, however they now only carry a modern rifle and dagger.
12. *Jaff.* 10,000 families. A great semi-nomadic tribe, as famous as the Hamawand; Saladin was supposed to have been of this tribe; they

inhabit both sides of the frontier. The Jaff leaders are noted for not betraying one another as do other Kurdish chiefs, hence their numbers and independence. They are supposed to dislike Europeans. Baban Kurds.

13. *Guran.* ? families. Baban Kurds.
14. *Nuredi.* ? families. Baban Kurds.
15. *Piran.* 900 families. Similar in customs to No. 3, section A; said to be a sub-tribe of the Hartushi, No. 76, section A. However, as I am not certain on this point, I have marked them as a separate tribe.
16. *Alan.* ? families. This name recurs in a sub-tribe of the Hartushi, (*see* No. 76E, section A) but I could find no connection. We see a tribe in section C, No. 15M, called Alian. Baban Kurds.
17. *Baki Khassa.* ? families. Baban Kurds.
18. *Kialoner.* ? families. Baban Kurds.
19. *Ghowruk.* ? families. Baban Kurds.
20. *Malkari.* ? families. Baban Kurds.
21. *Khoshnao.* 2,000 families. Completely sedentary. Work for Girdi and Shaykh Bezeini, Nos. 7 and 3, and occasionally look after crops of latter tribes during season of absence. Reputed to be poor fighters. Following account of origin was given me by chief Agha of the tribe:—"Ambesbudast was the son of Saranduz, and Saranduz was the Wazir of Sultan Selim. The son of Imam Hussein gave the forefathers of Ambesbudast a seal-ring and lordship over all the lands between Kermanshah and Mossul. Ambesbudast was the forefather of the Khosnao. The two saints of the tribe are Hanifa and Mazdak."[1]
22. *Bilbas.* 400 families. Frontier tribe. Baban Kurds. Semi-nomadic, spend the summer at Wazna.
23. *Acu.* 500 families. Semi-nomadic, some live in the town of Rania, great warriors and good horsemen. Spend summer at Wazna. Baban Kurds.
24. *Mamash.* 2,000 families. Complete nomads. Baban Kurds, spend summer at Wazna.
25. *Mengor.* 2,000 families. A warlike tribe, semi-nomadic, spend summer at Wazna.
26. *Mamakan.* ? families. This tribe now counts as a sub-tribe of the Surchi, No. 9, section A; the name Mamakan, or variations of it, reappears in section C, No. 15E Del Mamikan, and in section D, No. 8G Mamagan, a sub-tribe of the No. 8 Jibranli, and No. 9A Mamakanli, a sub-tribe of No. 9 Sipikanli. Armenian priests and

[1] Mazdak, it will be remembered, was a founder of a religion in Persia during the sixth century

the tribesmen of No. 9A state that the Mamakanli were Armenians who became Moslems. Probably they were a Christian tribe of nomads and have been completely scattered. The Mamakan, Mamagan, and the Del Mamakan have no tradition that I know of.

27. *Baliki.* ? families. A frontier tribe of which I know nothing more than that it exists, however it may be in some way connected with the Bellikan, No. 81, section D, and with No. 15, section E, Bellikanli. However, as the Bellikan, No. 81, are Zazas, it seems to me improbable.
28. *Pirastini.* 1,100 families. Baban Kurds. Village dwellers, similar to the Khosnao, No. 21, section A.
29. *Zemzan.* ? families.
30. *Badeli.* ? families. This is the name of a small sedentary tribe of Sunni Kurds living at Rowanduz; they acknowledge no connection with the Badeli, No. 1D, section E.
31. *Shirwan.* 1,800 families. Sedentary, their name is taken from the locality in which they live, industrious, hospitable, but warlike.
32. *Herki.* 3,000 families. A great nomadic tribe, much scattered, some are to be found near Erzerum, others near Van, and great numbers near Mossul. The Herki are a very dark-skinned people; their neighbours say they are not Kurds at all but some savage race. The Herki women are very bold and manly. The Herki sleep out in autumn without any tents. Taken as a whole they are a low, dirty tribe, owning large flocks of sheep, and dealing in inferior pack horses; it is impossible to mark them down with any accuracy, as they seem to have no fixed beats. They generally camp in small numbers and move about in little detachments. Their divisions are as follows:—

    Mendan. We see the name again as a sub-tribe of the Milli in North Mesopotamia, see section C, No. 1G.

    Zerhati. Sub-tribe of Herki, roves about in the vicinity of Van.

    Zeydan. Sub-tribe of Herki. This name appears again as a sub-tribe of the great Pinianishli, No. 73, section A, and once again as a sub-tribe of Motikan, section B, No. 20E.

    Haji. 200 families. Sub-tribe of Herki. This is the sedentary section of the Herki, and lives in the centre of the place marked with the number 32.

33. *Baradost.* 1,500 families. Tribe taking its name from Baradost river.

A. *Baradost.* 650 families. Tribe taking its name from Baradost river.

34. *Berzan.* 750 families. Taking tribal name from district of Berzan; this tribe is famous for its fighting qualities and a certain holy family known as that of the Shaykhs of Berzan.

35. *Nirva.* 800 families. Sedentary.
36. *Reikan.* 800 families. Sedentary.
37. *Zebar.* 1,000 families. This is a district containing about 30 villages inhabited almost entirely by sedentary Kurds who are called Zebar Kurds. They are careful farmers, good vine growers, good builders, hospitable to strangers, but incredibly quarrelsome among themselves. Their chiefs build small castles in which they are generally being besieged unless they are besieging some one else. These Kurds are usually plucky fighters on their own ground. They have a chronic feud with the Shaykhs of Berzan, see No. 34, section A.
38. *Ashaghi.* I can give no particulars of this tribe.
39. *Hasseina.* ? families. A small broken tribe of nomads and villagers near Mossul.
40. *Misuri.* 120 families. A poor sedentary tribe.
41. *Doshki.* 500 families. At Dehok. This section has a bad name for thieving and brigandage. Kermanji, evidently an offshoot of No. 41A, section A.

A. *Doshki.* 2,000 families. Industrious agriculturists at Geaver (Giaver).

42. *Jellali.* 4,000 families. Both sedentary and nomadic near Amadia. We find the name reappear in section B, No. 14. The latter is evidently a migration from Amadia. However, whether this Jellali is the mother tribe of the Jellikanli, No. 12, section E, is by no means certain.
43. *Dere.* 800 families.
44. *Berwari.* 600 families. Sedentary.
45. *Kohan.* 70 families. Nomads, probably a sub-tribe, but of which I know not.
46. *Shaykhan.* Yezidis or devil worshippers. ? families. Semi-nomadic. This tribe dwells near Shaykh Adi, the religious centre of the Yezidis and the dwelling place of the religious head of the sect. There is also a temporal chief who used to live there, but I understand that he now keeps his whereabouts a secret. The tribe takes its name from Shaykh Adi. There is nothing to show that it has any connection, other than religious, with the Yezidis of the Sinjar. See section C, No. 16.
47. *Reshkan.* ? families. There are said to be some Yezidis in this tribe.
48. *Haweri.* Yezidis or devil worshippers. 300 families. These live near Zakho. I suspect some connection with the Haverka, section C, No. 151.
49. *Spirti.* 70 families. Nomads. The name was given me while passing their tents. I had not, however, time to investigate.

50. *Miran.* 1,000 families. Low tribe of shepherds migrating from Jeziret ibn Omar to Lake Van in spring and returning in autumn. This tribe has an atrocious reputation for all kinds of villainy. Curiously enough they are usually very friendly to Christians and Europeans, but treat Moslems in a scandalous fashion. They move up to within about 15 miles of Lake Van annually, passing Shernakh on their way. They have a chronic feud with the Goyan tribe, section A, No. 53A.
51. *Hasseina.* 500 families. I cannot connect this with Hasseina, No. 39, section A.
52. *Sindi.* Total number of families 1,500. A mixed tribe of Moslems and Nestorians, latter in a minority. Sedentary. Two sub-tribes—*Slope*, 600 families, and *Guli*, 30 families.
53. *Goyan.* 1,400 families. A large and powerful tribe of sedentary and semi-nomadic Kurds. They have, I expect, several sub-divisions, but I have been unable to obtain their names. This branch contains a certain number of Zazas, for particulars of whom see section B. The Goyan are noted for independence and valour. They slew Mustapha Pasha, the great chief of the Miran, in a pitched battle in 1899.

A. *Shernakhli.* 600 families. Name given to a sedentary section of the Goyan living at Shernakh.

54. *Dakhori.* ? families. A few sedentary Kurds in the vicinity of Shernakh, probably a section of the Goyan.
55. *Shiriki.* 200 families. Wealthy sedentary tribe. Name suggests connection with the Zirikanli, No. 10, section D.
56. *Balian.* 70 families. Semi-nomadic, poor and scattered. Similar to the Herki, No. 32, section A.
57. *Eiru.* 100 families.
58. *Atmanikan.* 5,000 families. Very wealthy nomads. May be often seen in the Bitlis pass and near Bohtan, where their headquarters are. They dress like the Herki, No. 32, section A, but have not the bad reputation of the latter. They have hardly any horses. In summer they migrate up to the Mush plain.
59. *Silukan.* 900 families. Cultivators and nomads. Similar to No. 58, section A. Also migrate in summer to the Mush plain.
60. *Kichian.* 150 families. Nomads.
61. *Duderi.* 400 families. Nomads in summer on the south shore of Lake Van.
62. *Alikanli.* 150 families. Nomads. Very insignificant. Probably a sub-tribe, but could not discover whose.
63. *Halaji.* 900 families. Mixed sedentary Kurds, Turks, and Armenians, dwelling on the southern shores of Lake Van.

64. *Tiyan.* 300 families. This tribe has a bad name. It is said by some to be an isolated fragment of the great Arab tribe of Tai, but I do not know if there are any grounds for this belief.
65. *Hawatan.* 300 families. Sedentary in the Bohtan district.
66. *Keka.* ? families. Near Julamerik.
67. *Bellicar.* 180 families. A small tribe of semi-nomadic Kurds; no connection with Belliki or Bellikanli. They state that they were converted from heathenism by Khalid Ibn Walid.
68. *Khani.* 180 families. Sedentary near Khoshab.
69. *Takuli.* 450 families. Perhaps a sub-tribe of the Zilanli; the Takuli think they came from Erzerum about 100 years ago. They are now sedentary, very poor physique, and appear to be of the same low race as the Sipikanli north of Lake Van mentioned in the introduction to section D.
70. ? families. Owing to an accident the name of a tribe has here been lost. I leave the number blank in hopes of some day re-discovering the right name.
71. *Shekak.* Total number of families 6,000. A notable tribe; they are called Revand by the local Armenians. They only spend three months in tents, and therefore may be called sedentary. The following sub-tribes are, I think, only an ancient political confederation, and not attached by ties of blood.

A. *Shekifti.* 1,200 families. Completely sedentary.
B. *Mukeri.* 1,200 families. Completely sedentary; said to have migrated from Persia fifty years ago; split in two portions, one at Nourdous and one at Khoshab.
C. *Sheveli.* ? families. This tribe crops up again near Iskilip; I presume a forcible migration in Selim's time.
D. *Butan.* ? families.
E. *Sheveli.* ? families.
F. *Shekak.* 1,000 families. A southern branch of the Shekak; complete nomads.

72. *Zerzan.* 100 families.
73. *Pinianishli.* 1,200 families. A large tribe and head of a confederation of which the following are the chief branches. It is impossible to locate them more precisely than by saying they inhabit the country in the vicinity of the No. 73, section A. The following are the names of the affiliated tribes.

Zeydan. There are some Zeydan in Modeki, No. 20E, section B, and as we have seen a sub-tribe of the Herki, No 32C, section A.

Barkoshan. ? families.

Kinarberosh. ?

Suratawan. ?

Billijan. ?

Jelli. ? families. I suggest the mother tribe of No. 12, section E.

Gewiji. ? families. I suggest the mother tribe of No. 12, section E.

Shevilan. Obviously a fragment of No. 71C and 71E, section A.

Musanan. For remarks see section B, No. 12.

A. *Little Pinianishli.* 500 families. Apparently an offshoot of No. 73. There is supposed to be something disgraceful about this tribe, what I do not know. 13 of its families are Yezidis, others Christians.

74. *Givran.* ? families. This is the name of a small tribe in the district of Giaver. Local authorities state that the name merely indicates Giaver-an, *i.e.*, Giaver people, in which case it may have no connection with No. 8, section C, and No. 31L, section B.

75. *Shemsiki.* 900 families. An interesting tribe, once nomadic, now sedentary. The chiefs consider themselves of Arab stock and look on the common tribesmen as of low race. The tribesmen are very ugly as a rule, the chiefs refined and handsome.

76. *Hartushi.* This is a very important Kurdish tribe, and I suggest that investigation may some day show that it is the connecting link between the Kurds of Irak and the Kurds of Armenia. The nomadic branches of this tribe have a very bad reputation. Although richer than the Herki, No. 32, section A, they resemble them in mode of life and general appearance. The following are the sub-tribes.

A. *Ezdinan.* ? families. Said to be Yezidis. There is no mistake about the name.

B. *Merzigi.* 900 families. Sedentary near Bashkala.

C. *Mamresh.* 200 families. Yezidi religion but belong to Hartushi tribe.

D. *Mamed.* 200 families. I believe this sub-tribe of the Hartushi to be sedentary.

E. *Alan.* ? families.

F. *Beroz.* 60 families. Famous as cultivators of tobacco.

G. *Jiriki.* ? families.

H. *Shidan.* ? families.

J. *Mamkhor.* 400 families. Very warlike nomads.

K. *Khawistan.* ? families.

L. *Sharafan.* 3,000 families. The largest branch of the Hartushi nomads; descend south of Akra in spring.

M. *Mamadan.* 200 families. I think sedentary; some occasionally descend to the Beykhey Dagh, near Zakho.

N. *Gavdan.* 300 families. Nomads, very bad reputation as thieves, unhospitable and savage. Wealthy horse breeders. Camp in spring near Zakho.

O. *Zedek.* Nomads.
P. *Zefki.* 150 families. Nomads, shepherds.
Q. *Hafjan.* 500 families. Nomads.

SECTION B.

The tribes inhabiting this zone are completely cut off from the others mentioned in the catalogue, and have little or nothing in common with them. The barriers which divide this region from the zones A, C, D and E, may be enumerated as follows.

Firstly, the great Bitlis Gorge, which can only be approached from either extremity and forms a kind of natural dyke between zone B and A. Secondly, the Tigris which is usually unfordable and practically interrupts all communication with C. Thirdly, the huge spurs of the Eastern Taurus range which act as a protecting wall against D. Fourthly, the upper Euphrates which separates the Dersim Mountains from the overlapping portions of zone E.

From the point of view of a casual observer, I should be inclined to group the Kurdish tribes in this zone into five classes—

Class I. Would include numbers 1 to 10, 27 and 29.
Class II. No. 20 and its appendant letters.
Class III. Nos. 12 to 19.
Class IV. No. 23.
Class V. No. 31 and its appendant letters.

As regards Class I, they appear to be semi-nomadic and sedentary tribes who have at some period migrated *viâ* the Bitlis Pass into the undulating arable pasture land between Diabekir and the Bitlis Su. These people may quite possibly be a part of that multitude of tribes who lived in a state of vassalage to the ancient Kings of Armenia; the names Bekran, No. 6, and Musik, No. 1, both well known in the old histories, give colour to this idea. At any rate these tribes of the southern plains own no connection with any of the tribes mentioned in the other classes.

As to the habits and dress of this class, I can give very few details, as on each occasion that I passed through their country, I was unable to make any study of them with the exception of the Tirikan, No. 9. The men appear to be tall and well built, fairly industrious, but not very hospitable.

Classes II, III, IV and V, are dealt with in the catalogue as classes *en bloc* and need no further comment.

1. *Musik.* ? families. This tribe has been mentioned by previous travellers, but I could obtain no account of it. I do not omit it because the Chaldean Historian Toma of Merdis makes mention of the name. There is, however, a village in Motikan called Mosik. None of the Motikan Kurds, however, make use of the name as a tribal designation.

2. *Penjinan.* 500 families. A tribe noted for its fighting qualities. There are said to be some Yezidi families among them.
3. *Keskoli.* ? families. I am doubtful as to this tribes existence, it is probably a local name for a division of the Penjinan.
4. *Pouran.* 200 families. Semi-nomads, pastoral and agriculturists.
5. *Shaykhdodanli.* 200 families. I do not know if this tribe is sedentary or nomadic. There are a great number of non-tribal Kurds in this neighbourhood. A further difficulty lies in the fact that the Kurds of this region are averse to making known their tribal names or customs; resemblance of the name to the Duderi and Dudikanli should be noted.
6. *Bekran.* 500 families. Nomads; winter near Diabekir, and summer near Sairt; tradition states that they are the descendants of the Bagratians. The Armenian clergy generally speak with some certainty on this point. We see the name Bekiran, No. 16H, section C, among the Yezidis of the Sinjar. The Yezidis of the Sinjar believe that they came from a country north of the Tigris.
7. *Reshkotanli.* 500 families. Nomads; the Rushdunians are often mentioned in the history of Chamich, the Armenian priest; there is a peculiar resemblance in the name.
8. *Besheri.* ? families. A sedentary tribe between Sairt, Meyfarkin and Diabekir.
9. *Tirikan.* 650 families. A sedentary tribe between the Euphrates and Haini; fond of bright coloured clothes; wealthy and intelligent; kindly disposed to the few Armenians who live among them. The local Armenians state that they are of common origin and that they (the Armenians) are not of Armenian race; this idea is naturally discouraged by the Armenian clergy and laity of Diabekir, but I have it on the authority of a priest and Christian headman of the district.
10. *Kuzlichan.* ? families. This is a small tribe located as on map; the name is that of a district in the Dersim Mountains, about 80 miles north. I think we may infer a southerly migration from that region.

11. *Zekeri*	?	families.	⎫
12. *Musi.*	?	„	⎪
13. *Sarmi.*	400	„	⎪
14. *Jellali.*	100	„	⎪
15. *Khazali.*	50	„	⎬ See note, next paragraph.
16. *Bederi.*	?	„	⎪
17. *Malashigo.*	?	„	⎪
18. *Bosikan.*	180	„	⎪
19. *Kurian.*	180	„	⎭

NOTE.—The Bosikan and Kurian, Nos. 18 and 19, and the sub-tribe of

the Bosikan, No. 15, inhabit the district between Mush and Kabeljôus. Their tradition is that they used to worship a sword thrust in the ground and the moon and stars, and that they lived under the government of a Christian King named Tavit, who dwelt in the castle of Boso. Presently there came a certain Shaykh Nasredin, from the Khalif at Baghdad, who slew King Tavit and enlightened the people in the truths of Islam. The Emirs of Nasredin were Zakharia, Saru and Musa, and these brought with them their henchmen who formed the tribes of Zekeri, No. 11, Musi, No. 12, Sarmi, No. 13; after this settlement other tribes, namely, Malashigo, No. 17, Bederi, No. 16, and Jellali, No. 14, followed in the wake of the first and helped to drive the Bosikan and Kurian into the northern mountains. All these tribes have Armenians attached, and those with the Bosikan and Kurian are said to be the descendants of followers of King Tavit. None of the Armenians in this district bear any resemblance to those of the Mush plain or the villagers near Van, nor are they to be distinguished from the Bosikan and Kurian Kurds in dress or appearance. The Malashigo and tribes Nos. 11, 12, 13, 14, 16 call themselves Arabs, and besides talking Kermanji and Armenian, also talk among themselves a peculiar bastard Arabic which is just comprehensible, but almost as different from ordinary Arabic as is Italian from French. It is far more difficult to understand than the Arabic spoken at Sairt. At Tillu, a large village in the vicinity of Sairt, resides at present a certain Shaykh Nasredin, who is supposed to be the lineal descendant of the Shaykh Nasredin, previously mentioned. I met one of his nephews who told me that the family had a document giving them Tillu and certain lands; this paper was signed by Sultan Selim the conqueror of Persia. The family consider themselves to be of Abbasid stock and although few of them ever leave Kurdistan they make it a point to talk good Arabic among themselves. Shaykh Nasredin's nephew, who appeared a very well read man, told me he thought that the tribes Nos. 11, 12, 13, 14, 16, 17 were not really of Arabian origin but that they had accepted Islam and changed their tribal names for those of their conquerors whose language they adopted and then corrupted.[1]

20. *Modeki* (*Motikan*). This is the name of a peculiar and inaccessible mountain region north of Bitlis, and incidentally the appellation of

[1] We have already seen the name Jellali in section A, No. 42, and the Musanan, No. 73, section A, perhaps the tribes Musi and Jellali, Nos. 12 and 14, section B, are descendants of some of the former who may have assisted Shaykh Nasredin.

all Kurds who dwell within it. I endeavoured to effect an entrance but was unable to do so; anyone wishing to explore this district must do so on foot; the tribes inhabiting it are apparently mostly Zazas; they are extremely wild and shy, and difficult to talk to. Other Kurds who had been into the Motikan district supplied me with the following particulars :—

A. *Keyburan.* Zaza Kurds.
B. *Bubanli.* „ „
C. *Kusan.* „ „
D. *Rutchaba.* „ „
E. *Zeidan.* Kermanji Kurds.
F. *Erikli.* „ „ (Sometimes called Khiarta).
G. *Pir Musi.* „ „

By all accounts the Bubanli are the most ancient tribe in Modeki, the Zeydan, as we have seen in No. 32, section A, and No. 73, section A, are split as sub-tribes elsewhere. If the story that the Kermanjis of Motikan are slaves to the Zazas be true, there would be some ground for supposing that the former entered as refugees, particularly as the extremely difficult nature of the ground forbids the idea of its being conquered by anything but a regular army. Apparently the Zazas of Motikan are neither Moslems nor Christians. I would suggest that a thorough exploration of this district would prove very interesting, and might throw a wonderful light on the history of Armenia, if a good collection of folk songs and legends could be made.

21. *Pinjari.* 450 families. Sasun district speak Kermanji.
22. *Slivan.* ? families. Probably Zazas.
23. *Non-Tribal Zazas.* 1,000 families. In the locality where this number appears there are a quantity of non-tribal Zazas. Their state is almost anarchical, and they seem, although not naturally cruel or vicious, to have hardly any regard for human life; they frankly say they are as beasts of the field, and have hardly any religion. As an example of how unsophisticated these people are, I might cite the fact that such as I have met who have served in the Army have often become devout Moslems and look with shame on their previous state. They appear to have no idea of tribal organization. They speak the Zaza language and seem very poor farmers.

The Zazas are small, impish people with shrill voices, and are extremely shy before strangers. I should imagine that they are the remains of a primitive mountain race, similar to the Bihls.

The only instance I have encountered of Zazas living on the plains or in the country is at Suverek, where a few live with the Karagetch.

24. *Kedak.* 600 families. Zazas due south of Peru on the Veshin Dagh.
25. *Ashmishart.* 500 families. Zazas. Shia sect.
26. *Kulbin.* ? families. Zazas.
27. *Gurus.* ? families. Beyond the name I could obtain no particulars concerning this tribe. Ibrahim Pasha,[1] however, knows the name.
28. *Sinan.* ? families. Zazas.
29. *Elia.* ? families. Nomads; impossible to ascertain whether Zazas or Kermanji Kurds.
30. *Behirmaz.* 500 families. Zazas. Shia sect.
31. *Dersimli.* General appellation of Kurds living in the Dersim. With the exception of No. 31C, section B, Shawak, all the Dersim tribes are apparently Pagans, who call themselves Shias, their religion, as far as I could ascertain, being a mixture of magic and nature worship, which again develops into Pantheism. A man of this region said to me, "I do not worship God, for a part cannot worship the whole." However, they are Shia Moslems in outward form, swearing by Ali, and call him the greatest of the prophets, this, I think, chiefly to annoy the Sunnis. The Dersimli are doubtless robbers and cut-throats, but I doubt their courage, since a very little show of authority suffices to keep them in their fastnesses, whither it is difficult to follow them. All round the foot of the Dersim there are tribes who live in a kind of feudal vassalage to Beys who talk Turkish and veil their women; at first I imagined these Beys were the descendants of Turkish Military Fiefs, of whom one is always hearing and never meeting; as on former occasions these "Turkish" Beys turned out to be the descendants of indigenous chiefs, who have settled down and adopted Turkish customs. The Dersimli are small, wiry men with sharp features; they are intelligent and have a keenly developed artistic sense for colour and dress. There are indeed on the slopes of the Dersim some Turks, but they are Ak Koyunlu, of Usun Hassan, and live in a kind of commune of their own; for history of latter see Deguigne's *Histoire des Huns.* As far as I could ascertain, the Dersimli have a special dialect of their own but it is closely allied to Zaza.. Most of the Dersim tribes are regular migrants from south to north in late spring; their villages are left quite empty without caretakers.

A. *Milan.* This is the original mother tribe of the great Milli confederation in North Mesopotamia, with whom they still keep up communication. For particulars of the legend and importance attached to the name Milli or Milan, see No. 1, section C.

B. *Kechel.* 1,000 families. Near Palu.

[1] No. 1, section C.

C. *Shawak.* ? families. Sedentary ; lately converted to orthodox Sunnism.

D. *Ferhad Ushaghi.* ? families. In the vicinity of Surpignan. This is the only Kurdish tribal name beginning with F.

E. *Bakhtiarli.* ? families. Perhaps 30 villages near Chemishgezek ; semi-nomadic, or at least migratory, having two villages, one on the high land and one in the valley.

F. *Karabanli.* ? families. At Asunik.

G. *Mirzanli.* ? families. Exact location in Dersim unknown.

H. *Abbasanli.* ? families. Make splendid carpets of great intricacy of design and fineness in weaving.

I. *Balashaghi.* 2,000 families. Sedentary.

J. *Latchin Ushaghi.* ? families. At Amuga.

K. *Kuzlichan.* ? families. This is certainly not the name of a tribe, but of a Dersim district containing several tribes ; however, the name crops up as that of a tribe north of Diabekir, I presume a migration of some families from the Dersim.

L. *Givran.* ? families. Reported to be in Dersim, but I am doubtful.

SECTION C.

This zone is in reality the ancient province of the Northern Jazirah of the Empire of the Khalifs of Baghdad ; the Kurds inhabiting it may be roughly classed as follows :—

Class I, No. 1 and appendant letters. This class may be divided into two subsections—

(1) No. 1 to No. 1 Dx.
(2) No. 1 Ex to No. 1 Rx.

Class II, No. 15 and appendant letters.

Class III, No. 16 and appendant letters.

Class IV, the remaining numbers with the exception of 18 and 19.

With regard to Class I, subsection 1, they are evidently partly formed of a great migration from the Dersim district in the reign of Sultan Selim, but owing to intermarriage for many generations with the Arab, Aramean and Kurdish peoples of the district, and by absorbing many of the local tribes, they have lost their original characteristics. They are poor cultivators, but good herdsmen and carpet weavers.

Their mode of life is simple, January, February, March and April they spend in the lower slopes of the Karaja Dagh ; April and May on the plains of Mesopotamia ; June, July, August and September sees them move up towards Diabekir ; in October, November and December they move once more southwards.

Subsection No. 2. These tribes admit themselves of the same race and origin as subsection No. 1, but are cut off from it by the Euphrates river ; they are

all Shias or Pagans of the Dersimli type. At certain seasons priests from the Dersim district visit them and hold religious services.

Their dress is similar to that of the Turkish speaking people of Anatolia; however, their women veil before Moslems and Christians. The men are not very remarkable for any particular characteristic.

Class II.—It is very difficult to state with any preciseness whether the tribes included in this class can be termed Kurds proper or no. I presume that they represent scattered fragments of the old Aramean population, mixed with Imperial colonists of Roman times, Kurds, Persians, Turks and Mongols.

Some tribes are wholly Moslem, others wholly Christian (Jacobite sect), others Devil worshippers, others contain adherents of all three religions. Taken as a whole they are industrious and capable people, good stone-masons, and admirable vine-growers, but withal fierce, bloodthirsty, vindictive, revengeful, and treacherous. Peculiar religious movements are not uncommon amongst them, and the adoption of Evangelical Protestantism by a certain number has been productive of unexpected developments.

Class III.—The great Yezidi or devil worshipping community and tribal confederation of the Sinjar is entirely Kurdish. In physique the Yezidis of the Sinjar resemble the Dersimli Kurds, being small-boned, wiry, lean and hungry-looking men, with pinched features, small hooked noses, pointed chins, broad shallow lower jaws, high cheek bones, narrow close set black eyes, and thin lips. They twist their hair in six or seven small braided plaits which hang down on either side of their faces.

The dress of the Sinjar tribes is unlike that of any other people, and I should imagine of remote antiquity. It consists of a pointed brown felt cap, a white shirt of cotton cut square at the neck and with no opening in front, a cloak of gazelle skin or light brown leather, raw hide sandals, and leather belt.

By their own tradition they migrated to the Sinjar after Timur's invasion. However, they admit that the Yezidi faith existed in the Sinjar Mountain long before that date.

Class IV.—These Kurds of North Mesopotamia are the off-scourings and riff-raff of all Kurdistan, rogues, thieves, vagabonds and bullies almost to a man; they seem to have no single redeeming virtue, being idle, cowardly and cruel. They have little pride of race and seemingly intermarry and mix with gypsies and other low nomad tribes. From this class, however, must be excepted No. 18, No. 19, and No. 10, who have evidently migrated at some period from the plains north of Lake Van.

Note.—East of Urfa there is a large settlement of gypsies, who will pretend they are Kurdish tribesmen; the traveller should be on his guard against the information they will give him. The word "Nowar," or the question, "Do you come from Howek?" will invariably silence them, or make them admit their true origin.

1. *Milli.* 30 families. This name has a curious and peculiar mystery attached to it, which innumerable cross-examinations on my part of

every kind of Kurd has failed to elucidate to my own satisfaction. Some people merely say that the Milli were a powerful tribe who were broken up by the Turks in the 18th century. The facts at present stand as follows:—Ibrahim Pasha is chief of the Milli, and although his own tents do not amount to more than 30, he has complete jurisdiction over more than 2,000. Secondly, he is spoken of with great respect and reverence by the Kizilbash of Malatia, not because he is wealthy but because he is the head of the Milli; thirdly, he is the only stranger who can travel through the Dersim without an escort; fourthly, the Shemsiki, No. 75, section A, look on him as their nominal head; fifthly, isolated villages in Anatolia and the Erzinjian district speak of him as their patriarchal chief. Now this is all the more peculiar since in the Kurds enumerated there are Shias, Pagans, Pantheists, Zazas and orthodox Moslems, of which latter faith he is; his influence is therefore neither political nor religious, and yet influence he has, for Kurds will come from miles around to ask his opinion on family quarrels and generally take his verdict as final.

Again there are certain tribes which although allied to him in war have no regard for his Patriarchal position. Ibrahim's own explanation is as follows:—"Years and years ago the Kurds were divided into two branches, the Milan and Zilan; there were 1,200 tribes of the Milan, but God was displeased with them and they were scattered in all directions, some vanished, others remained; such as remained respect me as the head of the Milan."

Now the tradition with Ibrahim is that all this happened long before the days of Mohammed, thus some Milan are Christians, others Yezidis; the Milan tradition is that they are children of Shem and came from Arabia, but that the Zilan are from the East. Now this vague legend is found almost in its entirety among the Kurds of the Dersim, save that there we have the following variation:—

The Milan came from Arabia and settled in the Dersim; however, when Sultan Selim conquered West Kurdistan, his Vizier saw that the Kurds wandered up and down the Dersim slopes, and that the land was crowded with nomads, the Vizier ordered such as wished to cultivate, to build houses, and such as wished to remain in tents, to go south; some built houses, learned Turkish and veiled their women, others fled to the Dersim fastnesses, and others went south, among the latter the chief family of whom Ibrahim Pasha is now the head.

Among other stories of the Milan is the one that the Zilan are a base and ignoble race; curiously enough, whereever one meets a tribe admittedly of Zilan origin (they are in section D, Nos. 6, 9,

9A, and 17) you find rough and barbarous people with a peculiarly hideous cast of countenance. The legend to me is extremely interesting, but the way in which Milan Kurds would suddenly grow vague or change the subject while relating fragments of it was more than maddening. The reader would be surprised if he knew the months of toil I endured in collecting the above small paragraph.

All avowed Milan tribes are starred.

*A. *Danan.* 250 families. Nomads.

*B. *Seidan.* 450 families. Nomads. We have seen a similar name in section A, Nos. 32 and 73, and section B, No. 20E, but on this occasion I suggest the name is derived from some leader, either a Sayad or a man called Said.

*C. *Kiran.* 550 families. Nomads. Ibrahim Pasha suggests that these are of the same tribe as the Yezidi tribes; of course these Kiran are orthodox Moslems.

*D. *Dudikanli.* ? families. Nomads. With Ibrahim in N. Mesopotamia; there are five villages near Varto who speak Zaza, and there are said to be some in the Dersim, see section B.

(?)*E. *Khalajan.* 700 families. Nomads.

(?)*F. *Kelish.* ? families. Nomads.

*G. *Mendan.* ? families. Nomads, a small sub-tribe of No. 1; whether these have moved from the Herki, No. 32, section A, to the Karaja Dagh or *vice versa*, is difficult to say.

*H. *Kumnaresh.* 350 families. Nomads.

*I. *Sherkian.* 80 families. Nomads.

*J. *El Kawat.* ? families. Nomads.

*K. *Dashi.* ? families. Nomads.

*L. *Meshkenli.* ? families. Nomads.

*M. *Kalendelan.* ? families. Nomads reported in the Dersim, section B.

*N. *Haji Bairam.* ? families. Nomads.

*O. *Hassanekan.* 260 families. Nomads. These have nothing to do with the Hassananli, who are avowedly Zilan.

*P. *Khalajari.* 700 families. Nomads.

*Q. *Elia.* ? families. Nomads.

*R. *Isiadat.* 85 families. Nomads.

*S. *Terkan.* 700 families. Nomads.

*T. *Nasrian.* 75 families. Nomads.

*U. *Tchuvan.* 210 families. Nomads.

*V. *Sartan.* 80 families. Nomads near Ras-ul-Ain.

*W. *Usbakhan.* 70 families. Nomads.

*X. *Matmieh.* 800 families. Nomads.

*Y. *Chemikan.* 250 families. Nomads.

*Z. *Barguhan.* 130 families. Nomads.

*Ax. *Hisulieh.* 550 families. Nomads.

*Bx. *Chiaresh.* ? families. Nomads.

*Cx. *Zirofkan.* 2,000 families. Semi-nomads of the Karaja Dagh.

*Dx. *Daghbashi.* ? families. A large semi-nomadic tribe east of Suverek.

*Ex. *Bujak.* ? families. Nomads.

*Fx. *Hoshian.* ? families. Nomads.

(?)*Gx. *Beski.* 800 families. Apparently sedentary. A curious legend of this tribe is that they are of English or Frank origin and that their ancient name was *Salargan.* With reserve I suggest the name *Lusignan,* and as an explanation that some member of that house once had dealings with the tribe or took refuge in its tents.

*Hx. *Haji Manli.* 500 families. Nomads. No horses, travel small stages with donkeys.

*Ix. *Kassiani.* 500 families. Sedentary.

*Jx. *Chakali.* 1,000 families. Nomads.

*Kx. *Merdis.* 1,000 families. Sedentary, I think.

*Lx. *Eutergetch.* ? families. Nomads.

*Mx. *Janbeg.* ? families. Sedentary; obviously a fragment of No. 18, section F.

*Nx. *Beyleyan Porga.* 500 families. Sedentary.

*Ox. *Derejan.* 800 families. Nomads.

*Px. *Kao.* 5,000 families. Nomads and sedentary.

*Qx. *Mulikan.* 500 families. I do not know if nomad or sedentary.

*Rx. *Derejan.* ? families. Possibly a separate branch of No. 1Ox, section C or perhaps only the summer quarters of that tribe.

2. *Karagetch.* 1,700 families. This is the name of a low tribe of semi-nomads dwelling near Suverek; brutal, savage and indescribably filthy. This tribe has a bad name in every respect, and being on a high road gets a bad name for Kurds from many travellers. Curiously enough many of the Karagetch speak Zaza, but between Diabekir and the Tur Abdin there is a vast quantity of nameless non-tribal Kurds, who apparently are outcasts from their own clans; the worst of these "undesirables" seem to attach themselves to the Karagetch.[1]

[1] *Karagetch.* This tribe was originally a nomad Turcoman clan of Western Anatolia and was settled by Sultan Selim on the slopes of the Karaja Dagh. The object of this transfer was to compensate Kurdistan for the loss of the Ziriki, Tirikan and other tribes which the Ottoman Government had forcibly settled in West Anatolia. The Karagetch, however, rapidly intermarried with local non-tribal Kurds of low origin, and being illiterate soon lost their language and became to all intents and purposes a Kurdish tribe. Further, owing to the fact that for some years after their re-settlement they were protected and favoured by the Ottoman Government, many families of local nomadic Kurds joined their encampment and so helped not only to increase their numbers but to complete the transformation of the Turcoman clan into a Kurdish tribe.

3. *Non-tribal Zazas.* For an account see No. 23, section B.
4. *Charkessen.* ? families.
5. *Barhan.* ? families.
6. *Hasseran.* ? families.
7. *Abu Tahir.* ? families. These are said to be of Arab origin but talk Kermanji.

*8. *Givran.* ? families. Sub-tribe of No. 1, section C. (Accidentally left out of the letters.)

9. *Eimerzan.* ? families. This is a doubtful tribe.
10. *Chichichieh* (*Kiki*) (*Kikie*). 1,200 families. This is a large tribe of semi-nomadic Kurds, now inhabiting the slopes of the Karaja Dagh in winter (in villages) and descending in the Jagh-Jagh River in spring and early summer. Their chiefs state that they are the descendants of an Emir sent to rule the Diar *Erabieh* by the Abbasid Khalifs. When the Khalifate grew weak this family remained and was taken by the Kikieh Kurds as a ruling family. The local Bedawin look on this family of chiefs as men of good blood. The chiefs have a notable contempt for their tribesmen, who they talk of as "Kurdish Dogs," and I believe will not marry their women. The chief Agha of the Kikieh, Abdur Rahman, is a well read man, and has done a good deal of work with a view to locating the ancient cities on the banks of the Khabur; he has read a certain amount of history, and states that the Kikieh were one of the last remnants of the sedentary population of the Jazirah, that they were driven north by the Shammar, and only come south with the object of showing their rights of settlement in event of further re-establishment of agriculture in the north Jazirah.
11. *Dakhori.* ? families. A small migration from Shernakh.
12. *Bunesi.* ? families. I think this tribe does not exist, but as travellers have reported it I give the name.
13. *Mirsinan.* ? families. No particulars obtainable.
14. *Surkishli.* 900 families. Sedentary. This tribe is said to speak the dialect of Baban Kurds; if so, perhaps, connected with Surchi, No. 9, section A.
15. Under this number I have grouped the Moslem, Yezidi and Christian tribes of the Tur Abdin.

A. *Mizizakh.* 390 families. Tur Abdin. Moslem. Kurds.

B. *Saur.* ? families. Tribe of the Tur Abdin; mixed Christians and Moslems; speak Arabic.

C. *Mahalemi.* 800 families. This tribe has a peculiar history. They state that 350 years ago they were Christians. During a famine of corn they asked the Patriarch permission to eat meat during Lent. The Patriarch refused, and they became Moslems. They speak a

bastard Arabic, and the women wear red clothes and do not veil. Ibrahim Pasha says they are now a mixed race of Arabs and Kurds. Some families are still supposed to be Christians.

D. *Haruna.* 750 families. Sedentary Kurds; 90 of the families are Jacobite Christians.

E. *Del Mamikan.* ? families. A tribe of the Tur Abdin; speak bastard Arabic.

F. *Domana.* 180 families. Tribe of the Tur Abdin; Christians and Moslems.

G. *Dorkan.* 120 families. Tribe of the Tur Abdin mountain, composed of Yezidis and Moslems.

H. *Moman.* 600 families. Moslems, speak Kermanji; 90 families are Christians, also three of the tribal leaders.

I. *Haverka.* 1,800 families. Half Christian, half Moslem, speak Kermanji. I suspect some connection with the Haweri Yezidis, No. 48, section A.

J. *Salahan.* ? families.

K. *Girgiri.* 500 families. Tent-dwelling agriculturists; talk Kermanji, but said to be of Arabian origin.

L. *Dasikan.* 900 families. Yezidis, Moslems and Christians; speak Kermanji; Tur Abdin.

M. *Alian.* 1,200 families. Christians, Moslems and Yezidis; language, I think, Kermanji.

N. *Mizidagh.* ? families. See No. 15A. I suspect these to be a small nomadic section of No. 15A, who live close at hand.

16. *Yezidis of the Sinjar.*

A. *Bumteywit.* ? families. A tribe of Arabs living in a state of serfdom to the Yezidis of the Sinjar.

B. *Mirkan.* ? families. Sedentary.

C. *Samuga.* ? families. Dwell in tents near the Sinjar; I suspect the name of this tribe is derived from the locality in which they live.

D. *Beit-el-Khulta.* ? families. Sedentary.

E. *Hababa.* ? families. Sedentary.

F. *Kiran.* ? families. Tent dwellers in Sinjar; there are some other Moslem Kiran which have been noted. See No. 1, section C.

G. *Beled.* ? families. Sedentary Yezidis dwelling near the town of Beled Sinjar, and go by this name.

H. *Bekiran.* ? families. Sedentary; perhaps a section of the Bekiran near Diabekir.

I. *Mendikan.* 300 families. A tribe of nomadic Yezidis between Tell Afar and Beled. A certain number of the Mendikan are Moslems, and do not intermarry with the Yezidis. I could not ascertain whether they were Arabs who had attached themselves to the

Mendikan or not. At any rate on all matters of business they are on good terms with their devil-worshipping fellow tribesmen. I may note that Father Chamich's *History of Armenia* makes frequent mention of the Mandukanians.

17. *Alush.* 200 families. A tribe of outcasts and refugees under a Kurd chief; language Arabic.

18. *Berazieh.* 9,000 families. A branch of the Berizanli, No. 6A, section D, who have migrated at an unknown period to Seruj in North Mesopotamia. This is a confederation of the following tribes:—

	Families.
Keytkan	700
Shaykhan...	600
Okian	700
Shadadan	700
Alidinli	700
Ma'afan	700
Zerwan	500
Pijan	800
Karagetchan	500
Dinan	1,000
Mir	1,000
Didan	300

The fact that the Karagetchan appear in this list does not prove that the rest of the confederation should date their settlement at Seruj from post-Selim times. Their tradition is that they hail from Lake Van, whence they came during a famine year. They are now partly "Arabised," and many wear Arab dress and have adopted Arab speech. They are partly complete nomads, partly completely sedentary, and partly semi-nomadic. They have rather a bad reputation for freebooting, but are industrious and intelligent.

SECTION D.

The tribes inhabiting this zone are extremely complicated in organization, and very difficult to order and catalogue. As far as I can see they seem to fall into three classes.

Class I.—Nos. 6, 6A, 8, 9 to 13, 17, 23, 24.

These tribes are of a distinct and distinguishable race of tall, heavily built men, of surpassing ugliness of face and peculiar uncouthness of behaviour. Many travellers have generalized from them and imagine all Kurds to resemble them.

They are seemingly true nomads by instinct, and lack capacity of any kind for either war or agriculture, they appear at once stupid and treacherous, disloyal, rapacious and quarrelsome. However, they must have some qualities which are not apparent, since they seem to have been the masters of the country which they inhabit long before the government of Constantinople had any

power there. Their traditions state that they originally came from Diabekir, and were at one time either Armenian Christians or worshippers of fire. In many cases they have affiliated local tribes to themselves, notably the Jibranli, No. 8. But the affiliated tribesmen such as the Bellikan, No. 8I, are very easy to distinguish by physiognomy alone. A peculiar custom subsists among them as their women shave the hair of the scalp in a tonsure-like form. They are all orthodox Sunnis.

Class II, in which I would include Nos. 8A, 8B, 8C, 8D, 8E, 8F, 8G, 8H, 8I, 9A, 18, 19. These tribes I am inclined to look on as the original shepherd tribes of the region, who inhabited it before Class I entered the district; they are usually small, fine-featured, inoffensive people, with no very salient characteristics.

The Mamakanli are the most interesting in this division, for details see catalogue.

Class III.—I would suggest that Nos. 7, 16, and 16A are bodies of exiles sent from their native places by Sultan Selim the conqueror of Erzerum.

Class IV.—The remainder of the tribes in this region of whom I can give no details.

1. *Penjinan.* ? families. Nomads. Summer quarters, a few villages in the vicinity; call themselves Penjinan, No. 2, section B.
2. *Silukan.* ? families.
3. *Chukurli.* ? families.
4. *Azli.* ? families.
5. *Lolanli.* 480 families. Shia section.
6. *Hassananli.* 3,300 families. A large tribe owning 110 villages in the districts of Hinis Melasgird and Warto. Some of the members of this tribe are semi-nomadic, but have been gradually abandoning their tents of late years.

6A. *Berizanli.* 900 families. This is a sub-tribe of the Hassananli; all are now sedentary; probably the mother tribe of No. 19, section C.

7. *Isoli.* ? families. Some near Lake Van, possibly a fragment of the Hisulieh, No. 1Ax, section C.
8. *Jibranli.* 2,000 families. This is a tribe and confederation of 8 tribes as follows:—

A. *Mukhel.* ? families.
B. *Arab Agha.* ? families.
C. *Torini.* ? families.
D. *Aliki.* ? families.
E. *Asdini.* ? families.
F. *Shaykhekan.* ? families.
G. *Mamagan.* ? families. Probably connected with the Mamakanli, see No. 9A, section D.
H. *Shadelri.* ? families. Shias. A break off from No. 1C, section E.
I. *Bellikan.* 6,000 families. Zaza speaking Kurds, Shias.

The tradition of the Jibranli is as follows:—They lived in Arabistan (this to a Northern Kurd may mean Diabekir) three months in houses, nine months in tents each year. A certain Assad Pasha ordered them to go to Bingol, near Mush. The Jibranli are now rapidly becoming completely sedentary. It seems pretty clear to me that this tribe is composed of the Jibranli and fractions of others who have separated from their own clans. These, I expect, were the original inhabitants of the mountains before the arrival of the Jibranli, by whom even now they are roughly treated, and apparently live in a kind of vassalage to them. The Bellikan are somewhat more independent of the Jibranli and keep to themselves. The Jibranli women shave the top of their heads as do the men. The men wear the most extraordinary clothes, something after the fashion of East-end costermongers, pearl buttons, black velvet collar and cuffs, baggy trousers, sash, and, among the well-to-do, a collar and tie; on the head is worn an enormous white felt tarbush about 1 foot high bulging out like a busby; around this is turned a very small turban of silk. These are the only Kurds I have seen who dress in this way; I expect the costume, except for the tarbush, is a modern development. Another peculiarity of the Jibranli is that they wear carefully trimmed mutton-chop whiskers and long hair; the whole combination is more than fantastic. I might add the Jibranli in appearance resemble the Haideranli, being grotesquely ugly.

9. *Sipikanli.* 3,000 families. This is a base tribe dwelling north of Lake Van, they have the same rough manners as the Haideranli.

A. *Mamakanli.* ? families. Now count as a sub-tribe of the Sipikanli; they have been stated by some to be the ancient Mamagonians of the Armenian histories.

10. *Zirikanli.* 6,000 families. A tribe similar in all respects to the Jibranli, No. 8, section D, save it is one block tribe, as far as I know, with no proper subdivisions. I could not ascertain whether they also reckoned themselves from Arabistan. They were nomadic, but have settled during the last 10 years.

11. *Rashwan.* 70 families. Nomads.

12. *Bazikli.* 70 families. Nomads.

13. *Putikanli.* ? families. Near Khighi Kermanji, sedentary.

14. *Girdi.* ? families. Evidently a migration from No. 7, section A.

15. *Pisianli.* 700 families. Kermanji. Sedentary.

16. *Shaykh Bezeini.* 450 families. Two or three sedentary villages at Erzerum, obviously a migration from No. 3, section A.

A. *Shaykh Bezeini.* ? families. Reported to be some near Tortwin, a migration from No. 3, section A.

17. *Zilanli.* ? families.

18. *Badeli.* ? families. At Alashgerd. Shias.
19. *Shaderli.* ? families. A few semi-nomads at Alashgerd. Shias.
20. *Bashmanli.* ? families. Same as No. 56, section A? There are said to be many of this tribe in Persia, similar to, and connected with No. 56, section A.
21. *Hamdikan.* ? families.
22. *Manuranli.* ? families.
23. *Haideranli.* 20,000 families. The largest Kurdish tribe in existence to be met with from Mush to Urumia. The whole tribe are a low rough race of people of no merit either as soldiers, agriculturists or shepherds.
24. *Adamanli.* 1,800 families. Semi-nomadic.
25. *Yezidis.* I was unable to discover the name of this tribe, who are devil-worshippers.

SECTION E.

This zone, which lies between the Kizil Irmak and the Euphrates, presents the traveller with a picture totally different to any other in Kurdistan. The Kurds have a different position, and no observer could imagine they belonged to the same race as those described in the preceding catalogues; however, the dialects correspond pretty closely, though a Kurd from section A would find great difficulty in making himself understood. The tribes fall fairly easily into four classes:—

Class I. Containing all Kurds included in No. 1 and its appendant letters.

Class II. No. 2 and its appendant letters.

Class III. No. 3 and other tribes in its vicinity whom I have been unable to catalogue.

Class IV. The remaining numbers.

With regard to Class I, the Kurds in this division are completely sedentary, build fine villages, are industrious and intelligent, peaceful, but extremely treacherous, and on occasion ruthless and cruel. Fair hair and blue eyes are not uncommon among them; the men are generally short but handsome, and very submissive in their demeanour. To each of these tribes are attached certain families of nomads, all extremely poor, dark skinned and repulsively ugly, who claim common origin with the village dwellers.

The whole of Class I are reputed Shias, but undoubtedly have a secret religion.

Class II stands by itself, and I must refer the student to the catalogue.

Class III, the Sinaminli, I have been inclined to connect with the Milan tribes Nos. 1Hx to 1Rx, section C.

However, I have come to the conclusion that this would be a mistake. Police and government officials count them all as Kizilbash Kurds, but I am inclined to

think the Sinaminli are really exiles from Azerbaijan. They are complete Shias, but certainly have no Pagan rites or secrets.

They are fine handsome people, good farmers, literate, and very artistic in the painting of the interior of their houses.

Class IV are, generally speaking, nomads from Diabekir or Lake Van, who have drifted down the Taurus slopes toward the Mediterranean.

They are now settling down as sedentary agriculturists, or hire themselves out as shepherds. The shepherds dwell in tents with stone walls in winter, tents in summer, and bowers in autumn, they are kind and hospitable; and have a good reputation.

1. *Kureshli.* 2,000 families. Speak Kermanji; Shias or Pantheists. These Kermanji speaking Kurds of the north are an utterly different race to any of the foregoing tribes; they are a handsome, quiet people, who detest orthodox Moslems, and are always very reserved and quiet in the presence of the latter; they seem to have no predatory or nomadic instincts at all, but behind their silent demeanour there is a strange, savage spirit, which I have noticed among no other Kurds. They are excellent farmers and much inclined to philosophic speculation, this latter point is curious since they are seemingly illiterate. Another point in which they differ from all other Kurds is their peculiarly quiet manners and lack of humour.

A. *Balabranli (small).* 60 families. Shias in name; dwell on the opposite bank of Euphrates; curiously enough these people talk the Kermanji dialect. Seemingly they are more akin to the Badeli, No. 1D and No. 1C, section E, in appearance than to the Dersimli.

B. *Balabranli (great).* 500 families. A little south of Erzinjian, Zaza speaking, Shias in name, apparently Pantheists.

C. *Shaderli.* 3,000 families. Shias or Pantheists, a type similar to, but lower than, the Kureshli; live in underground houses; very poor agriculturists.

D. *Badeli.* 700 families. Kermanji Shias, semi-nomadic. There are said to be a few near Rowanduz.

2. *Kochkiri.* 10,000 families. This is a very peculiar tribe, or perhaps one might almost call them a separate nation. The men and women are of a peculiar type, being dark with finely-chiselled features, and resembling no other Kurdish race. Their language is seemingly a dialect of Kurdish, but hardly comprehensible to Zazas or Baba Kurds, or Diabekir Kermanjis. In religion I take them to be advanced Pantheists, who recognize nature as a female principal and God as a male. This opinion I give with every reservation as the result of interpreted conversations with well-to-do elders. The Kochkiri are miserable farmers, and dwell in semi-underground dwellings similar to those in the Mush plain and north of Lake Van.

A fact made the more peculiar when one notices that the Armenians and Moslems, who live near the Kochkiri, live in well built villages with hewn stone houses. The Kochkiri tradition is that they lived on the Dersim but were driven thence by the present mountaineers. The Kochkiri are an unwarlike people who bear no arms, and are extremely submissive. The Moslems say that they are treacherous and have very little regard for human life. I am inclined to believe that many Kochkiri inhabit the little known district north of the Sivas-Zara road. I had not time to make further investigations.

The divisions of the Kochkiri are as follows:—

A. *Sarolar*
B. *Barlolar* } in the vicinity of Karajaran.
C. *Garnolar*

D. *Ibolar.* In the vicinity of Hamobad.

E. *Eski Kochkiri* (*old*). 400 families. This is a tribe near Erzinjian who the Kochkiri say has no connection with them but was driven out of the Kochkiri district by tribes Sec. E., No. 2, A, B, C, D, from which we may infer that Kochkiri is not the real name of Sec. E, No. 2, A, B, C, D.

3. *Sinaminli.* 2,500 families. This is a large tribe of real Shias dwelling in the vicinity of Malatia. These are true Shias and by report their dialect more nearly approaches modern Persian than that of any other of the Kurds. They are very friendly to Europeans and strangers, a fact that may have given rise to the idea that all Shias or Kizilbash are so, but I have had bitter experience to the contrary.
4. *Kurejik.* ? families. This sounds an unlikely name.
5. *Al Khass.* 500 families. There is a mountain called Al Khass, south-east of Aleppo, from which this tribe may have taken its name.
6. *Kodir Zor.* 600 families.
7. *Kara Hassan.* 300 families. This may be a Turkoman tribe; see De Guigne's *Index of Names*, to the *Histoire des Huns.*
8. *Chughrishanli.* 500 families. Probably sedentary.
9. *Nederli.* ? families.
10. *Doghanli.* 250 families. Nomads.
11. *Dellianli.* ? families. A small tribe of nomads near Marash.
12. *Jellikanli.* ? families. Some at Van, others in the Marash plain. Latter are poor shepherds.
13. *Lek Kurdi.* ? families. This is a small tribe near Adana; they are said to speak Turkish. The name is familiar to Kurds on the Persian border, who say there are some in the Persian dominions.
14. *Delli Kanli.* 200 families. A small tribe of nomads of the Marash plain, the men are tall and well built, the women good looking.

These people live in ordinary Kurdish tents in summer on the Taurus slopes, in winter they proceed to fixed camps about 30 miles west of Killis. The fixed camps have stone walls for the tents. This applies equally to Nos. 10, 11 and 12, and No. 1Hx in section C.

15. *Bellikanli.* 250 families. Complete nomads. Kermanji dialect; rove about the Marash valley; no horses.

SECTION F.

This zone is quite outside the Kurdistan proper, and represents the various forcible migrations of tribes from all parts of Kurdistan undertaken by Sultan Selim the conqueror. The catalogue will give approximate points from whence they came.

Interest is given to the matter by the following trifle which I remarked. Near Angora I met men from tribes Nos. 15 and 17, they wore a similar dress and turban, the turban being twisted in a peculiar manner. Near Erzinjian I remarked the same peculiar turban, which I had not seen elsewhere, being worn by certain Turks. I asked them what was the meaning of this head-dress, whereupon they replied that they were descendants of Janissaries who had been given lands by Sultan Selim after his conquest. A visit to the Museum of the Janissaries and reference to some prints of Sultan Selim's period showed me that this turban, which has now gone out of fashion, was the common head-dress of that day.

The reason it is worn by these two colonies is obvious. The descendants of the Janissaries were isolated from other Turks and observed the fashion of their fathers. The tribesmen in Anatolia had evidently adopted or been obliged to adopt Turkish dress soon after being exiled, but being an isolated people did not follow the changing fashions of later times.

1. *Ukhchicemi.* 300 families. Sedentary.
2. *Urukchili.* 400 families. These may be Yuruks.
*3. *Milli.* 20 families. A small band of shepherds I met near Osmanjik; they said they were Milli, and have evidently come from either the Dersim or Karaja Dagh.
4. *Shaykh Bezeini.* 120 families. Nomads living near Boiabad in Anatolia; say they were driven there from No. 3, section A, by Sultan Selim. Wear Anatolian dress and now talk Kermanji dialect.
5. *Sheveli.* ? families. A forcible migration from No. 71E, section A.
6. *Badeli.* 200 families. Sedentary branch, have settled near Yuzghat; these are now orthodox Moslems and date their conversion 70 years back. I presume a forcible migration from No. 1D, section E.
7. *Haji Banli.* 300 families. Semi-nomadic, sub-tribe of No. 1, section C. A forcible migration from the Dersim or Karaja Dagh.

A. *Khatun Oghli.* 400 families. Semi-nomadic, subtribe of No. 1. section C, from Karaja Dagh. (Possibly Turkomans.)

B. *Makhani.* 300 families. Semi-nomadic, sub-tribe of No. 1, section C, from Karaja Dagh.

C. *Omaranli.* 800 families. Semi-nomadic, sub-tribe of No. 1, section C, from Karaja Dagh.

8. *Barakatli.* 1,000 families.

9. *Tabur Oghli.* 300 families. Semi-nomadic, might be Turkomans, but I was assured they were not.

10. *Shaykh Bezeini.* ? families. Reported to be some near Alashgerd, a migration from No. 3, section A.

11. *Judi Kanli.* 200 families. Perhaps a migration from Jebel Judi, near Shernakh.

12. *Khalkani.* 400 families. The name of a tribe now extinct which used to live near Rowanduz.

13. *Seif Kani.* 500 families. Semi-nomadic.

14. *Nasurli.* 600 families.

15. *Tirikan.* 400 families. A colony of Kurds planted north of the railway line, about 24 miles west of Angora; for origin see No. 9, section B.

16. *Atmanakin.* ? families. A small section reported in tents near Angora, probably a forcible migration from No. 58, section A.

17. *Zirikanli.* 500 families. Near Angora, migration from No. 10, section D.

18. *Janbekli.* 5,000 families. Mixed, nomads, semi-nomads and sedentary; expelled by Selim from No. 1Mx, section C (the most westerly Kurds).

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MISCELLANEA.

PROCEEDINGS OF THE ROYAL ANTHROPOLOGICAL INSTITUTE, 1908.

January 28th, 1908.

Annual General Meeting (see page 1).

February 11th, 1908.

Prof. W. RIDGEWAY, F.B.A., President, in the chair.

The election was announced of Dr. ROLAND B. DIXON and Mr. S. P. V. JERVOISE, as Ordinary Fellows of the Institute.

Dr. A. C. HADDON, F.R.S., read a paper entitled "An Additional Note on New Guinea Games," illustrated by lantern slides (see p. 289).

Questions were asked by the PRESIDENT, Dr. CAMPBELL, Mr. GOMME, Mr. LEWIS, Mr. EDGE-PARTINGTON and Mr. YULE.

The TREASURER exhibited a new instrument for determining the colour of the hair, eyes and skin (see *Man*, 1908, 27).

The apparatus was discussed by the PRESIDENT, Mr. GOMME, Mr. LOVIBOND and Mr. YULE.

February 25th, 1908.

On the motion of Mr. LONGWORTH DAMES, Mr. A. L. LEWIS was voted into the chair, in the absence of the President and Vice-Presidents.

Miss M. E. DURHAM read a paper on "Montenegrin Manners and Customs," illustrated by lantern slides.

The paper was discussed by Mr. GOMME, Mr. LONGWORTH DAMES, Mr. SEFTON JONES, the TREASURER and the CHAIRMAN.

March 10th, 1908.

Prof. W. RIDGEWAY, F.B.A., President, in the chair.

Dr. A. J. EVANS having taken the chair, the PRESIDENT read a paper on "The Origin of the Crescent as a Muhammadan Badge," illustrated by lantern slides and specimens (see p. 241).

The paper was discussed by Dr. EVANS, Dr. WRIGHT, Mr. LONGWORTH DAMES, Mr. VISICK, Miss DURHAM, Mr. SMURTHWAITE, Mr. HAYES and Mr. HUTCHINSON.

The PRESIDENT having resumed the chair,

Mr. A. L. LEWIS exhibited a series of objects from Palæolithic and Neolithic sites in Central France, and read a paper "On Some Megalithic Remains in the Neighbourhood of Autun," illustrated by lantern slides (see p. 380).

The paper was discussed by the PRESIDENT, the TREASURER, Mr. HODSON and Dr. WRIGHT.

March 24th, 1908.

Prof. W. RIDGEWAY, F.B.A., President, in the chair.

The election was announced of Dr. W. O. E. OESTERLEY and L'ABBÉ BREUIL as Ordinary Fellows of the Institute.

Dr. W. L. HILDBURGH read a paper on "Sinhalese Magic," illustrated by specimens and lantern slides (see p. 148).

Questions were asked by Mr. SMURTHWAITE, Mr. PARKYN, Mr. BALFOUR and the PRESIDENT.

May 5th, 1908.

Prof. W. RIDGEWAY, F.B.A., President, in the chair.

The election was announced of Mr. G. CALDERON as an Ordinary Fellow of the Institute.

Mr. F. G. PARSONS read a paper on the "Hythe Crania," illustrated by specimens and lantern slides (see p. 419).

The paper was discussed by the PRESIDENT, Mr. KEITH, Dr. WRIGHT, Mr. SMURTHWAITE and Mr. GRAY.

May 19th, 1908.

Prof. W. RIDGEWAY, F.B.A., President, in the chair.

The election was announced of Drs. BROWN, COLLETT, CONRAN and Mr. STUBBS as Ordinary Fellows of the Institute.

Mr. L. W. LA CHARD read a paper on "The Pagan Guari of Northern Nigeria."

The paper was discussed by Mr. PALMER, Mr. LEWIS, Miss WERNER, Dr. STANNUS, Mr. SMURTHWAITE, Mr. DENNETT, Mr. PARKYN and the PRESIDENT.

Mr. N. W. THOMAS communicated FATHER W. SCHMIDT'S latest views as to the distribution and affinities of Australian languages (see *Man*, 1908, 104).

Questions were asked by Mr. LEWIS, Mr. CALDERON, Mr. SMURTHWAITE, Miss PULLEN-BURRY.

June 23rd, 1908.

Prof. W. RIDGEWAY, F.B.A., President, in the chair.

The election was announced of Messrs. LA CHARD, STANNUS, CRAWFORD, DUKE and DUNDAS as Ordinary Fellows of the Institute.

The PRESIDENT referred to the death of Sir JOHN EVANS and paid a short tribute to his memory.

Mr. MARK SYKES read a paper on "The Kurdish Tribes of the Ottoman Empire," illustrated by lantern slides (see p. 451).

The paper was discussed by the PRESIDENT, Mr. SMURTHWAITE, Mr. LEWIS and Mr. PARKYN.

November 24th, 1908.

Prof. W. GOWLAND, F.R.S., Past President, in the chair.

The election was announced of Messrs. R. M. DAWKINS, J. P. DROOP, N. FENWICK, H. J. FLEURE, Capt. H. D. FOULKES, Messrs. H. E. LEVESON, A. H. MACMICHAEL, R. MERIVALE, J. H. MILTON, Dr. GORDON MUNRO, Col. J. SHAKESPEAR, Dr. D. WATERSTON, Mr. R. WELPLY and Mrs. WEGG as Ordinary Fellows of the Institute.

Mr. W. Scoresby Routledge read a paper on "Primitive Pottery and Ironworking in British East Africa," illustrated by lantern slides and specimens.

The paper was discussed by the Chairman, Dr. Haddon, Dr. Felkin, Mr. Balfour, Mr. Mentz Tolley and Mr. Young.

December 8th, 1908.

Dr. C. H. Read, Past President, in the chair.

The election was announced of Mr. Herbert Clark as an Ordinary Fellow of the Institute.

Mr. Longworth Dames having taken the chair, Dr. C. H. Read read a paper entitled "Notes on Early Ornament."

The paper was discussed by Mr. Lewis, Dr. Seligmann, Mr. Parkyn, Dr. Oesterley, Mr. Young and Mr. Tabor.

Colonel J. Shakespear read a paper on "The Kuki-Lushai Clans."

The paper was discussed by Mr. Hodson, Mr. Parkyn and Mr. Gomme.

BUREAU OF ANTHROPOLOGY.

The following Memorial, which was supported by a large number of signatures of well known administrators, men of science and heads of business houses, was presented in November:—

"To the Right Honourable Herbert Henry Asquith, K.C., M.P., Prime Minister and First Lord of the Treasury; to the Right Honourable Reginald McKenna, K.C., M.P., First Lord of the Admiralty; to the Right Honourable Herbert John Gladstone, M.P., His Majesty's Secretary of State for Home Affairs; to the Right Honourable Sir Edward Grey, Bt., M.P., His Majesty's Secretary of State for Foreign Affairs; to the Right Honourable The Earl of Crewe, K.G., His Majesty's Secretary of State for the Colonies; to the Right Honourable Richard Burdon Haldane, K.C., M.P., His Majesty's Secretary of State for War; to the Right Honourable Viscount Morley, O.M., His Majesty's Secretary of State for India; to the Right Honourable David Lloyd George, M.P., Chancellor of the Exchequer; to the Right Honourable Winston Spencer Churchill, M.P., President of the Board of Trade; and to the Right Honourable Walter Runciman, M.P., President of the Board of Education.

"We, the undersigned, respectfully beg leave to call attention to the following considerations:—

"1. It has long been felt by anthropologists that the study of anthropology possesses not merely a scientific interest but has also great practical utility for the nation.

"2. Several of our distinguished administrators, both in the Colonies and India, have pointed out that most of the mistakes made by officials in dealing with natives are due to the lack of training in the rudiments of ethnology, primitive sociology and primitive religion. Numerous instances of the troubles arising from this cause can easily be adduced.

"3. At the time when the 'native problem' forms a very important factor in Colonial and Indian administration, we venture to think that the training of young

officials is a matter of national importance, and there is evidence that some of our leading administrators are fully alive to its value. Recently, Sir Reginald Wingate addressed a letter to the Universities of Oxford and Cambridge in which he asked whether those Universities were prepared to give instruction in ethnology and primitive religion to probationers for the Sudan Civil Service: the Oxford Anthropological Committee and the Cambridge Board of Anthropological Studies at once replied in the affirmative, and courses of instruction in those subjects have already commenced.

"4. We therefore respectfully submit that the time has arrived when all selected candidates for the Consular, Sudanese, Colonial and Indian Services should be required to take a course of study in those branches of ethnology, sociology and religion which have a practical bearing on the races amongst whom their future work will lie.

"5. Not only is it important that the probationers should be trained in the elements of anthropology, but it is also desirable that the officials already in the service should be encouraged to render themselves more efficient in their duties by obtaining instruction when at home on furlough. Some of these, from time to time, have gone to Oxford and Cambridge to improve their knowledge, or rather to obtain a scientific knowledge respecting institutions and practices which come under their observation in the performance of their duties, but under the present system men with such interests and energy are, not unnaturally, exceptional. On the other hand, if the Government gave facilities and encouragement to its officials to make themselves more efficient in the way indicated, a stimulus would be given to all such civil servants to fit themselves better for their work, and to record facts invaluable for administration and commerce.

"6. Nor is it only for the administrator that training in anthropology and facility for its further study are important. For purposes of commerce it is of vital necessity that the manufacturer and the trader should be familiar with the habits, customs, arts and tastes of the natives of the country with which or in which they carry on their business. The Germans have long since seen the value of such a training; they have spent, and are spending, large sums annually in promoting the study of the ethnology of all parts of the world, and their remarkable success in trade in recent years, not only with primitive and barbaric races, but also in China and Japan, is largely due to this fact.

"7. From mere ignorance of local habits and customs, travellers, missionaries and others not unfrequently have provoked the natives instead of gaining their sympathy, and thus not only have nullified the results of costly expeditions, but also have caused political difficulties and complications.

"8. In the two old Universities ample means are already provided for the training of probationers and officials in anthropology, and there are good reasons for believing that other universities will, before long, establish similar departments.

"9. On the other hand, no provision has as yet been made anywhere for the training of schoolmasters and medical officers in anthropometry, to fit them to take measurements of school children and army recruits. Yet this branch of anthropology is one of the highest importance, not simply for scientific reasons, but because of its practical bearing on the great question of physical deterioration, which has long engaged the attention of anthropologists and the medical profession, and has lately been discussed in Parliament.

"10. Before, however, any series of measurements can be taken which is likely to lead to fruitful results, some fixed principles of anthropometrics must be accepted by official bodies, in order that a uniform system may be adopted throughout the United Kingdom and ultimately throughout the Empire.

"11. Although the teaching of anthropology can be carried out efficiently by universities, there is a distinct need for a central body, which shall be able to co-ordinate all branches of that study, and discharge for it functions analogous to those performed for science in general by the Royal Society, and for the special study of geography by the Royal Geographical Society. It is clear that such a body could not be constituted in, nor its functions discharged by, any university, for any attempt to establish such a Bureau of Anthropology in any one university would inevitably lead to jealousies fatal to its success and detrimental to the general interests of the study.

"12. On the other hand the need indicated could be fully supplied by the establishment in London of a bureau in which all the distinguished anthropologists of the Kingdom could meet on common ground, as do all the leading mathematicians, physicists, chemists and biologists in the Royal Society. All the elements of such a bureau already exist in the Royal Anthropological Institute of Great Britain and Ireland: it has a fine special library and a large collection of photographs which have been always freely at the service of all who want information about the natives of any particular region: it has a *Journal* of long recognized repute: it has local correspondents not only in most parts of the Empire, but also of the world, whilst in it already meet the leading anthropologists of the kingdom. The Foreign, Colonial and War Offices not unfrequently send to its library copies of the papers issued by them from time to time and also hand over for publication in the *Journal* notes on native races made by officials.

"13. As the Royal Anthropological Institute is not a teaching body, and as it includes anthropologists from all universities, the development within it of an Imperial Bureau of Anthropology could be effected without rousing the jealousy of other institutions.

"14. The bureau would collect information respecting the ethnology, institutions, arts, religion and law of all races, especially of those in the British Empire, and it would publish the notes sent in by observers in all parts of the world, issuing these in the form of bulletins, when the reports were of such bulk and importance that they could not be conveniently included in the *Journal*: it would direct the preparation of monographs on all that is known up to date on certain departments of anthropology, and of bibliographies of the literature relating to various races and tribes, thus rendering all the available data ready for use at any moment by Government officials, selected candidates for the Services, manufacturers, traders, settlers, scientific travellers and missionaries: it could also render valuable service as an advisory body to the Government Offices.

"15. The bureau could undertake the very important task of co-ordinating the study of anthropometrics and of organizing an Anthropometric Survey for the United Kingdom, a subject of pressing importance in view of the alleged physical deterioration of the population.

"16. For carrying out the work of such a survey it would be desirable to establish a Central Committee which would comprise representatives of the Institute and also those of the various universities and other bodies.

"17. Finally, just as the Royal Geographical Society examines for and confers a diploma in geographical surveying on properly qualified candidates, the bureau might confer a diploma on officials, scientific travellers, and others who had submitted to a proper test of their distinction in some branch of anthropology, and it would approve for certificates, schoolmasters and others who had shown themselves competent to make anthropometrical observations in the examinations held under the direction of the bureau.

"18. It is obvious that the development within the Royal Anthropological Institute of such a bureau would entail additional expenditure for which its funds (derived solely from the subscriptions of its Fellows) are not adequate.

"In view, therefore, of the services which such a bureau would render to the nation, we respectfully petition His Majesty's Government to make an annual grant of £500 to the Royal Anthropological Institute for carrying out the scheme set forth, and also to grant a suitable set of rooms in the Imperial Institute. The Royal Geographical Society receives an annual grant from the State for placing its valuable collection of maps at the service of the public, and we venture to believe that the Royal Anthropological Institute, if similarly subsidised, can render in the way indicated still greater services to the nation."

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1901 Skeat, W. W., Esq., M.A., *Romeland Cottage, St. Albans.* (¶§)

1866 Skues, F. M., Esq., M.D., Brigade Surgeon-Major, 58 *Riggindale Road, Streatham, S.W.* (*)

1909 Smith, Rev. E. W., *Baila-Batonga Mission, Kasenga, N.W. Rhodesia,*

1910 Smith, G. Elliott, Esq., M.A., M.D., F.R.S., Professor of Anatomy, *The University, Manchester.*

1865 Smith, Worthington G., Esq., F.L.S., 121 *High Street South, Dunstable.* (¶)

1907 Smith, W. Ramsay, Esq., D.Sc., M.B., Permanent Head, Health Department; *Adelaide, South Australia.*

1905 Smurthwaite, T. E., Esq., 134 *Mortimer Road, Kensal Rise, N.W.*

1907 Solano, E. J., Esq., 4 *Park Lane, W.*

1893 Somerville, Captain Boyle T., R.N., *Hydrographic Department, Admiralty, S.W.* (¶)

1909 Spearman, C., Esq., Ph.D., Lecturer in Experimental Psychology, *University College, London, W.C.*

1909 Spencer, Captain L. D., Egyptian Army, *Port Súdan viâ Suez.*

1908 Stannus, H. S., Esq , M.B., *Zomba, Nyassaland; Savile Club, W.*

1880 Stephens, Henry Charles, Esq., F.L.S., F.G.S., F.C.S., *Cholderton, Salisbury.* (*)

1907 Stewart, James, Esq., 8 *Bouverie Street, E.C.*

1887 Straker, Joseph, Esq., *Royal Societies Club,* 63 *St. James', S.W.*

1883 Streeter, E. W., Esq., F.R.G.S., F.Z.S., 49 *Compayne Gardens, Hampstead, N.W.* (*)

1903 Strong, W. M., Esq., M.A., B.C., 3 *Champion Park, Denmark Hill.*

1908 Stubbs, W. W., Esq., Assistant District Commissioner, *Lagos.*

1909 Sundar, Donald H. E., Esq., Commissioner of the Sundarbans, c/o *Messrs. Grindlay and Co., Hastings Street, Calcutta.*

1903 Swinhoe, R. C. J., Esq., *Mandalay, Upper Burmah.*

1902 Sykes, Major P. Molesworth, C.M.G., H.B.M. Consul-General, *Meshed, N.E. Persia.* (*¶)

1899 Tabor, Charles James, Esq., *White House, Knott's Green, Leyton, Essex.*

1905 Talbot, P. A., Esq., *The Cottage, Abbot's Morton, Worcestershire.*

1906 Tangye, H. L., Esq., *Maxstoke Castle, Warwickshire.*

1906 Tata, D. J., Esq., c/o *Jeremiah Lyon and Co.,* 4 *Lombard Court, E.C.*

1906 Tata, R. J., Esq., c/o *Jeremiah Lyon and Co.,* 4 *Lombard Court, E.C.*

1901 Tate, H. R., Esq., *Mombasa, British East Africa.* (¶)

1892 Taylor, Frederick, Esq. (*)

1879 Temple, Lieut.-Colonel Sir R. C., Bart., C.I.E., *The Nash, Worcester.* (¶§)

Year of Election.

1905 Tench, Miss Mary F. A., 4 *Avonmore Gardens, W.*

1881 Thane, George Dancer, Esq., Professor of Anatomy in University College, London, *University College, Gower Street, W.C.* (*¶)

1904 Thomas, N. W., Esq., M.A., Corr. Mem. Soc. d'Anthrop. Paris. (¶*)

1884 Thomas, Oldfield, Esq., F.R.S., F.Z.S., 15 *St. Petersburg Place, Bayswater Hill, W.* (*¶)

1904 Thompson, H. N., Esq., c/o *H. S. King and Co.*, 9 *Pall Mall, S.W.*

1890 Thomson, Arthur, Esq., M.A., M.B., Vice-President, Professor of Human Anatomy in the University of Oxford, *The Museum, Oxford.* (¶§)

1882 Thurn, H.E. Sir Everard F. im, K.C.M.G., C.B., Governor, Fiji, 1 *East India Avenue, E.C.* (¶)

1896 Tims, H. W. Marett, Esq., M.D., *Deepdene, Cavendish Avenue, Cambridge.*

1899 Tocher, James F., Esq., B.Sc., F.I.C., *Chapel Street, Peterhead, N.B.* (¶)

1895 Tolley, Richard Mentz, Esq., F.H.S., *Moseley Court, near Wolverhampton.*

1904 Torday, E., Esq., 40 *Lansdowne Crescent, W.* (¶)

1901 Travers, Major John A., *Tortington House, Arundel, Sussex.*

1910 Tremearne, Captain A. J. N., *Tudor House, Blackheath Park, S.E.*

1889 Turner, Sir William, K.C.B., M.B., LL.D., D.C.L., F.R.S., F.R.S.E., Principal of the University of Edinburgh, 6 *Eton Terrace, Edinburgh.* (¶)

1867 Tylor, Edward Burnett, Esq., D.C.L., LL.D., F.R.S., Past President (1879–81; 1891–93), Professor Emeritus of Anthropology in the University of Oxford, *The Museum House, Oxford.* (¶§)

1891 Tylor, Mrs. E. B., *The Museum House, Oxford.*

1902 Visick, H. C., Esq., M.D., 29 *Brownswood Park, Green Lanes, N.*

1891 Waddell, Lt.-Col. L. A., C.B., C.I.E., LL.D., *Kite's Nest, Hastings.* (*¶)

1901 Waddington, S., Esq., B.A., 15 *Cambridge Street, Hyde Park, W.*

1863 Wake, C. S., Esq., Foreign Member Anthrop. Inst., New York, 5762 *Rosalie Court, Chicago, Illinois, U.S.A.*

1874 Walhouse, M. J., Esq., 28 *Hamilton Terrace, St. John's Wood, N.W.* (¶)

1905 Walker, Basil Woodd, Esq., M.D., 6 *Dawson Place, Pembridge Square, W.*

1866 Wallace, A. R., Esq., O.M., D.C.L., F.R.S., F.L.S., F.R.G.S., F.Z.S., *Broadstone, Wimborne, Dorset.* (¶)

1902 Warren, S. Hazzledine, Esq., F.G.S., *Sherwood, Loughton, Essex.* (¶)

1908 Waterston, David, Esq., M.D., Professor of Anatomy, *King's College, London, W.C.* (¶)

1902 Watt, J., Esq., District Commissioner, *Calabar, Southern Nigeria.* (¶)

1907 Welch, H. J., Esq., Hon. Solicitor, 9 *Homefield Road, Bromley, Kent.*

1907 Wellcome, Henry S., *Snow Hill Buildings, Holborn, E.C.*

1895 Wells, Samuel, Esq., F.R.G.S., *York City Bank, Bridlington, Yorks.*

Year of Election.

1908 Welpley, Rupert, Esq., *Aro, Lagos*; 355 *Romford Road, Forest Gate, E.*

1905 Westermarck, E., Esq., Ph.D., Professor of Sociology in the University of London, 8 *Rockley Road, West Kensington Park, W.* (¶)

1910 Whiffen, Captain T. W., 14th Hussars, *United Service Club, S.W.; Ardwick, Sussex.*

1901 White, Franklin, Esq., *P.O. Box* 669, *Bulawayo.* (¶)

1907 White, James Martin, Esq., 1 *Cumberland Place, Regent's Park, N.W.*

1909 Williamson, R. W., Esq., *The Croft, Didsbury, Manchester.*

1902 Windle, Bertram C. A., Esq., M.A., D.Sc., F.R.S., *Queen's College, Cork.*

1869 Winwood, Rev. H. H., M.A., F.G.S., 11 *Cavendish Crescent, Bath.*

1906 Wray, Cecil, Esq., *Hillview, Grayshott, Haslemere, Surrey.*

1909 Wright, A. R., Esq., *H.M.'s Patent Office, Southampton Buildings, W.C.*

1903 Wright, W., Esq. M.B., D.Sc., F.R.C.S., F.S.A., F.Z.S., *London Hospital, E.*, 143 *Dartmouth Road, Cricklewood, N.W.* (¶*)

1906 Young, Alfred Prentice, Esq., Ph.D., F.G.S., c/o *Grindlay and Co.*, 54 *Parliament Street, S.W.*

1906 Yule, G. Udny, Esq., F.S.S., 28 *Great Ormond Street, W.C.* (¶)

AFFILIATED SOCIETIES [under By-Law IX].

1909 The Oxford University Anthropological Society, c/o *R. R. Marett, Esq., M.A., Exeter College, Oxford.*

1910 The Cambridge University Anthropological Club, c/o *A. R. Brown, Esq., M.A., Trinity College, Cambridge.*

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1910 C. M. Barbeau, Esq., *Oriel College.*

1909 W. D. Wallis, Esq., *Wadham College.*

SOCIETIES, Etc., EXCHANGING PUBLICATIONS

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Dublin...Royal Dublin Society.
— Royal Irish Academy.
— Royal Society of Antiquaries.
Edinburgh..Royal College of Physicians.
— Royal Society of Edinburgh.
— Society of Antiquaries of Scotland.
Glasgow...Philosophical Society.
Liverpool...Institute of Tropical Research.
— University Institute of Archæology.
London...African Society.
— British Medical Association.
— Folklore Society.
— Geologists' Association.
— Hellenic Society.
— India Office, Whitehall.
— Japan Society.
London...Nature.
— Palestine Exploration Fund.
— Quatuor Coronati Lodge, No. 2076.
— Royal Archæological Institute.
— Royal Asiatic Society.
— Royal Colonial Institute.
— Royal Geographical Society.
— Royal Society.
— Royal Society of Literature.
— Royal Statistical Society.
— Royal United Service Institution.
— Society of Antiquaries.
— Society of Biblical Archæology.
Taunton...The Somersetshire Archæological Society.
Truro...Royal Institution of Cornwall.

EUROPE.

Austro-Hungary.

Agram... Kroätische Archäologische Gesellschaft.
Budapest... Magyar Tudományos Akademia.
— Magyar Nemzeti Néprajzi Ostálya.
Cracow... Akademija Umiejetnósci.
Sarajevo... Landesmuseum (Wissenschaftliche Mittheilungen aus Bosnien).
Vienna... Anthropologische Gesellschaft.
— K. Akademie der Wissenschaften.

Belgium.

Brussels... Académie Royale des Sciences.
— Collection de Monographies Ethnographiques.
— Instituts Solvay.
— Société d'Anthropologie de Bruxelles.
— Société d'Archéologie de Bruxelles.

Denmark.

Copenhagen... Société des Antiquaires du Nord.

France.

Lyons... Société d'Anthropologie de Lyon.
Paris... L'Anthropologie.
Paris... École d'Anthropologie.
— Revue de l'Histoire des Religions.
— Soc. des Americanistes.
— Société d'Anthropologie.
— Année Sociologique.

Germany.

Berlin... Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.
— K. Museum für Völkerkunde.
— Seminar für Orientalische Sprachen.
Brunswick ... Zentralblatt für Anthropologie, etc.
Cologne...Rautenstrauch-Joest-Museum.
Giessen... Hessische Blätter
Gotha... Petermann's Mittheilungen.
Halle-a-d-Saale... Kaiserliche Leopoldina Carolina Akademie der Deutschen Naturforscher.
— Deutsche Morgenländische Gesellschaft.
Kiel... Anthropologischer Verein für Schleswig-Holstein.
Leipzig... Archiv für Religionswissenschaft.
— Archiv für Rassen und Gesellschaft Biologie.

Leipzig... Verein für Erdkunde.
Munich... Deutsche Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.
Stuttgart... Zeitschrift für Morphologie und Anthropologie.

GREECE.

Athens... Ephemeris Archaiologikè.
— Annual of the British School of Archæology.

ITALY.

Florence... Società Italiana di Antropologia, Etnologia, e Psicologia Comparata.
Rome... Accademia dei Lincei.
— Bullettino di Paletnologia Italiana.
— Società Romana di Antropologia.
Turin... Archivio di Psichiatria.

NETHERLANDS.

Amsterdam... Koninklijke Akademie van Wetenschappen.
Leiden... Internationales Archiv für Ethnographie.
The Hague... Koninklijk Instituut voor de Taal-, Land-, en Volkenkunde van Nederlandsch Indië.

PORTUGAL.

Lisbon... Portugal em Africa.
Porto... Portugalia.

RUSSIA.

Dorpat...Publications of the University.
Helsingfors ... Suomen Muinaismuistoyhdistyksen Arkakauskirja (Journal of the Finnish Archæological Society).
Moscow... Imper. Obshchestvo Lubitelei Iestestvoznania, Antropologii, i Etnografii.
St. Petersburg... Imper. Akademia Nauk.

SWEDEN.

Stockholm... Academy of Antiquities, National Museum.
— Nordiska Museet.
— Ymer.
Uppsala... Kungl. Universitetets Bibliotek.

SWITZERLAND.

Neuchâtel ... Soc. Neuchateloise de Géographie.
Zurich... Musée National Suisse.

AFRICA.

CAPE COLONY.

Cape Town... Royal Society of South Africa.

EGYPT.

Giza... Archæological Survey of Nubia.
Khartum... Wellcome Laboratory Reports.

AMERICA.

ARGENTINE.

La Plata ... Museum.

BRAZIL.

Rio de Janeiro... Museu Nacional.

CANADA.

Ottawa... Royal Society of Canada.
Toronto... Canadian Institute.

UNITED STATES.

Berkeley, Cal.... University of California.
Cambridge, Mass.... Peabody Museum, Science.
Chicago... Field Museum.
New York... American Museum of Natural History.
Philadelphia... Free Museum of Science and Art (University of Philadelphia, Department of Archæology.)
Salem... American Antiquarian.
Washington... American Anthropologist.
— Bureau of Ethnology.
— Smithsonian Institution.
— United States Geological Survey.
— United States National Museum.
Worcester, Mass.... American Journal of Psychology.

ASIA.

China.

Shanghai... Royal Asiatic Society (China branch).

India.

Bombay... Anthropological Society.
— Indian Antiquary.
Calcutta... Bengal Asiatic Society.
Colombo... Royal Asiatic Society (Ceylon branch).
Simla...Archæological Reports.

Japan.

Tokio... Asiatic Society of Japan.
— Tokio-Daigaku (Imperial University).

Java.

Batavia... Bataviaasche Genootschap van Kunsten en Wetenschappen.

Philippine Islands.

Manila...Ethnological Survey of the Philippine Islands.

Siam.

Bangkok... National Library.

Straits Settlements.

Singapore... Royal Asiatic Society (Straits Branch).

AUSTRALIA AND PACIFIC.

Honolulu... Bernice Pauahi Bishop Museum.
Melbourne... Royal Society of Victoria.
New Plymouth, N.Z.... Polynesian Society.
Sydney... Australian Museum.
— Australasian Association for the Advancement of Science.
— Royal Society of New South Wales.

EXCHANGES FOR "*MAN.*"

England.

Colchester...Transactions of the Essex Archæological Society.
Hull... The Naturalist.
Liverpool..Institute of Tropical Research.
— Journal of the Gypsy Lore Society.
London... Annals of Psychical Science.
— British Association.
— Church Missionary Review.
— Eugenics Review.
— Journal of the East India Association.
— Lancet.
— Reliquary and Illustrated Archæologist.
— Saga-Book of the Viking Club.
— Sociological Review.
— South American Missionary Society.

Argentine.

La Plata ... Museum.

Austro-Hungary.

Budapest ... Magyar Nemzeti Museum.
Mödling ... Anthropos.
Uh. Hradiště... Pravěk.

Belgium.

Brussels... Bulletin de la Société d'Études Coloniales.
— Bull. de la Soc. Géographie.
— Instituts Solvay.
— Missions Belges.
Ghent... Volkskunde.

France.

Dax... Société de Borda.
Paris... L'Homme Préhistorique.
— La Nature.
— La Revue Préhistorique.
— Revue des Études Ethnographiques.
— Revue des Traditions Populaires.

GERMANY.

Brunswick... Globus.
Danzig... West Preussiches Provincial-Museum.
Dresden... Bericht des Vereins für Erdkunde.
Frankfurt a/M... Völker Museum.
Giessen...Hessische Blätter.
Guben... Niederlauzitzer Mittheilungen.
Hamburg... Museum für Völkerkunde.
Munich... Correspondenzblatt.
— Geographische Gesellschaft.
— Prähistorische Blätter.
Nürnberg... Bericht der Natur-historischen Gesellschaft.

INDIA.

Simla...Archæological Reports.

ITALY.

Como... Rivista Archeologica della Provincia de Como.
Naples... La Scienza Sociale.
Rome... Rivista Italiana di Sociologia.

NATAL.

Pietermaritzburg ... Museum.

NEW SOUTH WALES.

Sydney... Science of Man.

NORWAY.

Trondhjem, K. Norske Videnskabers Selskab

OCEANIA.

Fiji... Na Mata.
Samoa... O le Sulu.

PORTUGAL.

Lisbon... Archeologo Portuguêz.
Serpa... A Tradição.

RHODESIA.

Bulawayo...Proceedings of the Rhodesian Scientific Association.

RUSSIA.

St. Petersburg... Zhivaya Starina.

SWEDEN.

Uppsala... Kungl. Universitetets Bibliotek.

SWITZERLAND.

Zürich... Schweizerisches Archiv für Volkskunde.

SYRIA.

Beyrouth, Mélanges de la faculté orientale de l'Université de St. Joseph.

UNITED STATES.

Andover, Mass.... Phillips Academy (Dept. of Archæology).
Berkeley, Cal. ...University.
Boston... American Journal of Archæology.
Chicago... Open Court.
New York ... American Museum of Natural History.
— Popular Science Monthly.
— Science.
Philadelphia... Proceedings of American Philosophical Society.
Washington ... Bureau of American Ethnology.
— Bureau of Manufactures.
— Records of the Past.

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JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF GREAT BRITAIN AND IRELAND.

ANNUAL GENERAL MEETING.

JANUARY 26TH, 1909.

Professor W. RIDGEWAY, F.B.A., *President, in the Chair.*

The Minutes of the last Annual General Meeting were read and carried.

The PRESIDENT appointed Mr. R. A. DURAND and Dr. W. L. HILDBURGH Scrutineers, and declared the ballot open.

The PRESIDENT announced the election of Dr. M. HOERNES, Dr. G. SCHWALBE and Professor W. Z. RIPLEY as Honorary Fellows, and of Mr. F. H. S. KNOWLES as an Ordinary Fellow, of the Institute.

The SECRETARY read the Report of the Council for 1908, which, on the motion of Mr. LEWIS, seconded by Mr. RAY, was unanimously adopted (p. 2).

The TREASURER presented his Report for 1908 (p. 6).

Mr. PARKYN called attention to the inadequacy of the receipts as compared with the expenditure in the matter of the bibliography.

The SECRETARY gave a short explanation.

On the motion of Mr. PARKYN, seconded by Mr. LONGWORTH DAMES, the Report was adopted unanimously.

The PRESIDENT delivered his address on "The Relation of Anthropology to Classical Studies" (p. 10).

A vote of thanks to the President was proposed by Dr. HADDON, who asked, in the name of the Institute, that the President would permit his address to be printed in the *Journal*.

The motion was seconded by Mr. G. L. GOMME and carried by acclamation.

The SCRUTINEERS then handed in their Report, and the following were declared to be duly elected as Officers and Council for the year 1909–10:—

President.—Professor W. Ridgeway, M.A., D.Litt., LL.D., F.B.A.

Vice-Presidents.

A. J. Evans, Esq., M.A., D.Litt., F.R.S., F.B.A.
Professor A. Thomson, M.A., M.B.
Col. Sir T. H. Holdich, K.C.M.G., K.C.I.E., C.B.

Hon. Secretary.—T. A. Joyce, Esq., M.A.

Hon. Treasurer.—J. Gray, Esq., B.Sc.

Council.

M. L. Dames, Esq.
W. L. H. Duckworth, Esq., M.A., M.D., Sc.D.
R. J. Gladstone, Esq., M.D.
T. C. Hodson, Esq.
Sir H. H. Johnston, G.C.M.G., K.C.B.
T. Heath Joyce, Esq.
A. Keith, Esq., M.D.
A. L. Lewis, Esq., F.C.A.
Sir R. B. Martin, Bart.
A. P. Maudslay, Esq.
R. H. Pye, Esq.
S. H. Ray, Esq., M.A.
Professor Carveth Read, M.A.
W. H. R. Rivers, Esq., M.A., M.D., F.R.S.
C. G. Seligmann, Esq., M.D.
W. W. Skeat, Esq., M.A.
Sir R. C. Temple, Bart., C.I.E.
Professor E. Westermarck, Ph.D.
W. Wright, Esq., M.B., D.Sc.
G. Udny Yule, Esq., F.S.S.

A vote of thanks to the outgoing members of Council was carried on the motion of Mr. LEWIS, seconded by Mr. LEVESON.

A vote of thanks to the Scrutineers was carried on the motion of Mr. EDGE-PARTINGTON.

REPORT OF THE COUNCIL FOR 1908.

The Council is able to report a year of unusual progress. The number of new fellows elected is greater than the corresponding figure for 1907, though the increase is less apparent owing to the losses sustained by death and resignation. It was found necessary, moreover, to remove a number of names from the list of

Fellows, owing to persistent non-payment of subscription. The numerical gains and losses of the Institute are expressed in the appended table:—

	Honorary Fellows.	Corresponding Fellows.	Local Correspondents.	Ordinary Fellows.		Total Ordinary	Total Membership.
				Compounding.	Subscribing.		
1 Jan., 1908 ...	44	5	34	81	328	409	492
Less by death or resignation.	−3			−1	−32	−33	−36
Since elected ...			+2	+1	+36	+37	+39
1 Jan., 1909 ...	41	5	36	81	332	413	495

Among the losses which the Institute has suffered through death are Dr. E. T. Hamy, Dr. A. W. Howitt and Professor O. T. Mason, Honorary Fellows; Messrs. G. M. Atkinson, W. M. Beaufort, Dr. S. W. Bushell, Mr. R. Codrington, Sir John Evans, Mr. W. Hurst, Dr. G. Oppert and Miss Rücker, Ordinary Fellows.

Dr. E. T. Hamy was elected an Honorary Fellow in 1884. As Professor in the Museum of Natural History, and Director of the Museum of Ethnography in Paris, his studies had covered an unusually wide field. He was an ex-President of the Anthropological Society of Paris, and by his death, at the age of sixty-four, France loses one of her leading anthropologists.

The death of Dr. A. W. Howitt has already been noticed in *Man* (1908, 45). His well-known works on the Australian aborigines were based on practical experience in the field commencing as early as 1860. In particular, his book on the *Native Tribes of South-East Australia* will remain a classic for students of anthropology.

Professor Otis Tufton Mason died in November. Born in 1838, he was educated at Columbia University, Washington, where he graduated in 1861. In 1874 began his long connection with the National Museum, of the Ethnological Department of which he was head curator at the time of his death. His published writings were many, his monograph on Aboriginal American Basketry being one of the most noteworthy. He was elected an Honorary Fellow of the Royal Anthropological Institute in 1886.

In Mr. G. M. Atkinson the Institute has lost one of its oldest fellows. He was elected in 1874, and was a well-known figure at the meetings. He had more than once served on the Council.

Dr. S. W. Bushell died in September, and his loss will be much felt by all orientalists. He was particularly eminent as a student of Chinese art and antiquities, in which he was, perhaps, the leading authority in this country.

The loss which the Institute has sustained by the decease of Sir John Evans has been keenly felt by all archæologists. A full obituary notice appeared in *Man* (1908, 51). The Council takes this opportunity of offering once more a tribute to the memory of their distinguished ex-President.

Another fellow of very long standing was Professor G. Oppert, who joined the Ethnological Society in 1869, and the Anthropological Institute on its foundation. He was one of the leading authorities on Hebrew, Sanskrit, and Indian languages, and had occupied professorial chairs at the Universities both of Madras and Berlin.

Fellows of the Institute will also regret the loss of the following travellers and men of science whose researches have done much to further the study of Anthropology:

Professor Wilhelm Grube, the well-known Sinologist, died in July. He had been connected with the Berlin Museum für Völkerkunde, and had recently undertaken a scientific expedition to North China.

The well-known Americanist, Morris K. Jesup, died in January. He had devoted himself principally to the studies of the peoples of the North West and their possible connection with the inhabitants of North East Asia.

Dr. Abraham Lissauer will be regretted by students of two branches of Anthropology. His training as a doctor had led him, naturally, to the study of physical anthropology, but he had also done eminent work in the sphere of European pre-history.

Mr. Archibald Little was well known for his travels in Central and Western China, and his books contain much that is of use to students of the manners and customs of the Chinese.

Hauptmann Moritz Merker is chiefly known to English anthropologists as the author of a valuable monograph on the Masai. He died in German East Africa in February last.

The Danish explorer Mylius-Erichsen, who died in November, was known for his researches among the Eskimo of West Greenland. His personal interest lay chiefly in Folklore.

Richard Pischel, who died in December, was one of the principal Sanskrit and Prakrit scholars in Europe, and amongst his published works are many articles dealing with the life of Buddha. He was one of the chief promoters of the Turkestan Expedition of Grünwedel and Le Coq.

Dr. Wilhelm Reiss, the eminent colleague of Professor Stubel, and well known for his excavations in the necropolis of Ancon, Peru, and for other work in South America, died in June as the result of a hunting accident.

The death of Professor E. Schrader, the distinguished Assyriologist, took place in July. He leaves behind him a large amount of published material which will always be of importance to students of Assyriology.

Dr. Emil Stephan, who died in May, had carried out valuable researches of an ethnographical nature in the Bismarck Archipelago.

Meetings.

During the year ending December 31st, 1908, ten ordinary meetings and one special meeting were held. At these, thirteen papers were read, nine dealing with ethnographical, one physical, one archæological, one linguistic and one with historical subjects. Six exhibitions of specimens were also made.

Huxley Memorial Lecture.

The Huxley Memorial Lecture was delivered by Professor W. Z. Ripley of Harvard University on November 13th. The title of the lecture was the "European inhabitants of the United States." At the conclusion of the proceedings the President presented Professor Ripley with the Huxley Memorial Medal in recognition of his eminent services to Anthropology.

Publications.

During the year two half-yearly parts of the *Journal* have been issued, viz., Vol. XXXVII, 2 (July–December, 1907) and Vol. XXXVIII, 1 (January–June, 1908). Of the former 112 copies have been sold, of the latter 107. The Council is pleased to call attention to the fact that the combined sales exceed the record constituted last year by no less than 43 copies. Owing to this increase in the sales it has been determined to increase the future editions.

With regard to *Man*, the usual twelve monthly parts have been issued. The amount received both from subscriptions and office sales shows considerable excess over last year. The Council recommends that no change be made in the present system of subscription until the result of the Institute's Memorial to the Government be known. As soon as a definite reply to the Memorial has been received the question of abolishing or modifying the existing system of subscription will again be discussed in the light of that reply.

A second volume of the Bibliography of Anthropology and Folklore, containing works published in the British Empire in 1907, prepared under the direction of a joint Committee of the Royal Anthropological Institute and the Folklore Society, has also been published.

Library.

The number of accessions to the Library surpasses the record constituted last year by over twenty volumes. Binding of current periodicals is well up-to-date, and the exchange list has been increased by the addition of one British and three foreign periodicals.

External.

A Memorial has been drafted and presented to the Government, praying that an annual subsidy and offices in the Imperial Institute be granted to the Royal Anthropological Institute. The full text of this memorial, which was signed by a large number of influential personages, both fellows and non-fellows of the Institute, was circulated amongst the fellows, and will be reprinted amongst the Miscellanea of the *Journal* (Vol. XXXVIII, 2).

TREASURER'S REPORT FOR THE YEAR 1908.

On the 31st December, 1908, the assets of the Institute were as follows:—

	£	s.	d.	£	s.	d.
Assets (not immediately realisable):—						
Books in Library, Publications, Furniture as per estimate of 1903 ...				885	0	0
Realisable Assets:—						
£300 Metropolitan Consolidated 3½ per cent. Stock, present value	307	10	0			
Balance at Bank	359	10	5			
Cash in Hand	2	1	9			
Petty cash	5	17	11			
Arrears of subscriptions, £186 12*s.* 0*d.* valued at	86	0	0			
				761	0	1
Total Assets				£1,646	0	1

Against which there are liabilities:—

	£	s.	d.			
Anthropological *Notes and Queries* ...	67	16	11			
Library Fund	3	0	8			
				70	17	7
Leaving a surplus, if all property were realised, of				£1,575	2	6

Considering only our immediately realisable assets:—

	£	s.	d.
These amount to	761	0	1
Less	70	17	7
	£690	2	6

The state of ideal solvency also implies, as in my last report, the following additional liabilities:—

	£	s.	d.
Journal (1908)	250	0	0
Man (October, November, December)	38	12	11
Unexpended life subscriptions	434	10	0
Total	£723	2	11
Our immediately realisable Reserve Fund is	690	2	6
Leaving a deficit in the Reserve Fund of	33	0	5

The Financial Position of the Institute.

The total receipts of the Institute are £26 less than last year.

The receipts from annual subscriptions are £16 less, and the receipts from life subscriptions £73 10*s.* less than last year.

The receipts from the sale of *Journal* are £18 more and from the sale of *Man* £31 more than last year.

The total expenditure this year is £175 less than last year, a decrease which more than neutralizes the small decrease in the receipts.

The financial progress of the Institute during the last six years may be illustrated by the balances at the end of each year. These are (to the nearest pound):—at the end of 1903, £55; of 1904, £118; of 1905, £152; of 1906, £191; of 1907, £258; and of 1908, £368.

J. Gray, *Hon. Treasurer.*

ROYAL ANTHROPOLOGICAL INSTITUTE

Receipts and Payments

RECEIPTS.	£ s. d.	£ s. d.	£ s. d.
BALANCES in hand, January 1st, 1908 :—			
Cash in Bank :—			
Deposit account	100 0 0		
Current account	147 2 1		
Cash in Hand	3 0 0		
Petty cash	4 14 2		
Country cheques not paid into Bank	3 4 0		
		258 0 3	
Less Balances owed as per 1907 Account :—			
Library Fund	5 4 10		
"Notes and Queries"	63 18 8		
		69 3 6	
			188 16 9
SUBSCRIPTIONS :—			
Life Subscription	31 10 0		
Ordinary	547 1 0		
Arrears	29 8 0		
Advance	32 11 0		
		640 10 0	
Less Refund		6 6 0	
			634 4 0
SALE OF JOURNAL		194 1 11	
SALE OF HUXLEY LECTURE		3 2 2	
			197 4 1
"MAN"			
Net receipts		127 10 5	
Postage, etc.		16 12 0	
			144 2 5
ADVERTISEMENTS in *Journal*			1 18 0
„ „ "Man"			1 2 3
DIVIDENDS and Interest			11 0 10
LIBRARY FUND :—			
Balance, January 1st, 1908	5 4 10		
Grant	10 0 0		
		15 4 10	
Less Binding and Books	7 3 1		
Petty Cash	5 1 1		
		12 4 2	
			3 0 8
"NOTES AND QUERIES" :—			
Balance		63 18 8	
Received, 1908		3 18 3	
			67 16 11
HOBLEY'S "UGANDA"			27 12 7
"PHYSICAL DETERIORATION"			8 2 8
BIBLIOGRAPHY receipts			4 14 8
SUNDRIES			3 16 4
			£1,293 12 2

OF GREAT BRITAIN AND IRELAND.

for the Year 1908.

PAYMENTS.	£	s.	d.	£	s.	d.	£	s.	d.
RENT							135	0	0
JOURNAL				311	6	9			
Less refunds	2	18	6						
	33	18	0						
				36	16	6			
							274	10	3
ADVERTISING							10	9	6
"MAN":—									
Printing and blocks				155	14	1			
Postage, etc.				16	12	0			
							172	6	1
SALARIES							131	4	2
HOUSEKEEPING							20	10	0
STAMPS AND PARCELS							49	6	5
PRINTING AND STATIONERY							11	1	1
LANTERN							2	18	5
INSURANCE							1	13	10
TRAVELLING							3	0	0
GRANT TO LIBRARY							10	0	0
HUXLEY MEDAL AND LECTURE							1	12	6
HOBLEY'S "UGANDA":—									
Balance as per contra				27	12	7			
Received 1908				1	4	0			
							26	8	7
"PHYSICAL DETERIORATION":—									
Balance as per contra				8	2	8			
Received 1908					4	0			
							7	18	8
BIBLIOGRAPHY							60	0	0
SUNDRIES							8	2	7
BALANCES at Bank				359	10	5			
Cash in Hand				2	1	9			
Petty cash				5	17	11			
							367	10	1
							£1,293	12	2

We have examined the above accounts and compared them with the Books and Vouchers relating thereto, and find the same to be accurate.

(Signed) RANDALL H. PYE, WALTER W. SKEAT, } *Auditors.*

January 13th, 1909.

PRESIDENTIAL ADDRESS.

THE RELATION OF ANTHROPOLOGY TO CLASSICAL STUDIES.

By Prof. William Ridgeway, M.A., Sc.D., F.B.A., LL.D., Litt.D.

From this date last year, when the Institute did me the honour to elect me as its President, I resolved to select as the subject of my address at this meeting the Relation of Anthropology to Classical Studies. Although a volume of essays, embodying a series of lectures delivered at Oxford, has recently appeared, I have determined to run the risk of seeming to imitate its title and the work. Various reasons induced me to adhere to my original intention. In the first place I had already some fifteen months ago delivered an address at the annual meeting to the Classical Association of Scotland on the relation of Archæology to Classical Studies, since printed, in which I covered a good deal of the ground dealt with in the Oxford lectures. In the second place it is the subject on which I am least incompetent to speak, since most of my own work for the last thirty years has consisted in bringing anthropological methods to bear on classical subjects.

The appearance of the Oxford essays to which I have just alluded shows that anthropology is now recognised as a powerful ally by some classical scholars. But twenty years ago this was not so. The first step in the application of the comparative method in any form to any subject connected with the ancient civilisations was taken by Sir H. S. Maine, my personal obligations to whom I can never forget. But the really first vigorous application of what may be termed the anthropological method to classical authors was made by McLennan, who, in his *Primitive Marriage*, followed up Bachofen's *Mutterrecht*. In a later essay McLennan demonstrated that there were strong traces of the former existence of the principle of descent through women in Greece, more especially at Athens, whilst in his essay on Totemism he set agoing a new group of social and religious ideas, which have flourished and fructified down to this hour, though it cannot be said that the chief riddle has yet found an Œdipus. In his essay McLennan proposed to explain that class of Greek myths which represent gods, in the guise of beasts, becoming the husbands of maidens and the ancestors of kingly families on the analogy of the American totem animals mated with women. But up to 1880, strange as it may seem, no one, not even Maine himself, had thought of applying the com-

parative method to Aristotle's famous account of the origin of society. In a dissertation on the *Politics of Aristotle*, published in 1882, I sought to explain the chief difficulties which had perplexed scholars in his account of the evolution of society by comparisons with institutions still surviving amongst primitive peoples. These explanations have found their way into the notes of the two chief modern editions of the Politics.

It will be observed that it was on the legal, social and religious sides that the first attempts were made in the application of the new method to the classics. As yet, no one had dreamed of instituting any comparison between the material remains of Greece and Rome and those of savage peoples. To have suggested that Greek art could ever have had an early stage comparable to that of modern savages had never entered the head of any student of classical archæology and still less of any professor of fine art. Tradition had studiously regarded everything connected with Greece and Rome, Egypt and Babylonia as standing on a completely different plane from every other culture, and the Classical, Egyptian and Oriental archæologists looked upon the cultures and arts of these ancient lands as entirely *sui generis*. Though the proverb that Rome was not built in a day had been in the mouths of men from generations, no one dreamed of applying it to the culture of Rome, and no one in dealing with the arts of Greece ever considered that she too must have had her day of small things.

In 1887 I ventured to bring to bear upon the origin of Greek coins and weights, and consequently of all coinage, the comparative method in a paper called the *Homeric Talent, its Origin and Affinities*. In that essay I tried to show that the origin of coined money amongst the Lydians, and its further evolution by the Greeks and Italians, was not to be regarded as an isolated phenomenon, but that it was completely on all fours with various stages in the evolution of primitive money from the use of all sorts of objects such as axes, and other implements, ornaments, sheep, goats, cows and slaves and their gradual translation into gold and silver equivalents when the use of these metals becomes known. In this way only, I maintained, could the evolution of Greek metallic currency be traced from the gold rings made on a fixed standard found in the shaft graves of Mycenæ, through Homeric times, when all accounts were kept in cows, though gold was passing from hand to hand in small lumps of given weight, to its culmination in the magnificent coinage of Greece, Magna Græcia, and Sicily. At the present moment and to an audience of anthropologists there seems nothing startling or alarming in this doctrine, but when it was propounded in 1887, its author had the greatest difficulty in getting it published. After a long and protracted struggle with the then editor of the *Hellenic Journal*, the paper was printed in that periodical, but in a sadly mutilated condition.

What was the cause of this repugnance to a new theory based on a wide induction? The fact is that classical scholars and archæologists in this country were entirely given up to *a priori* methods, which gave every scope for the play of wild speculation untrammelled by any restraint of solid facts. They proposed

emendations in sound texts without ever dreaming of inspecting a single manuscript of the author whose sentiments they proposed to correct. They slavishly followed their German brethren and had settled down, as already said, into a comfortable conviction that not only the culture and art of Greece and Rome stood on a different platform from all other studies, but that it might be pursued with a looseness of method which was banned in all scientific inquiries.

They further held that this culture was in the main derived from the East and Egypt, *lux ex Oriente* being their leading axiom. It was a matter of faith that the Greeks had no weight standards nor any means of weighing gold or silver, and did not employ weight in any form until they borrowed weights and weight systems from Babylonia. This event, it was supposed, only took place when they borrowed from Asia the art of coinage, which the numismatists then placed at about 600 B.C. They went still further, and although it was well known to anthropologists that even the most primitive races had standards of measure derived from the parts of the human body, such as the ell, the foot, the thumb or inch, and the finger, it was also a matter of faith for the classical archæologists that the Greek and Roman standards of measure as well as those of weight, were all derived from the Royal Babylonian cubit. Of course with regard to the theory of measure I had no difficulty in showing that measures of length were invented all the world over by primitive men, who also established for themselves measures of capacity from familiar objects of daily use, which nature herself makes of a more or less uniform size, such as hen's eggs, gourds, coco-nuts, and the joints of bamboos of a given diameter. The origin of measures of length and capacity I established in an essay on the Greek *Stadion* and in my article *Mensura* in the second edition of Smith's *Dictionary of Antiquities.*

But the theory of the origin of Greek and Roman coin weights died harder in spite of this. The Greek numismatists continued to represent the Greek as only acquiring standards of weight after 700 B.C., although I had shown that the gold rings in the shaft graves at Mycenæ, which may be placed about 1400 B.C., were made on a standard corresponding to that known as the Eubœan Attic standard of classical times. Moreover, two pairs of scales made of gold and no doubt meant for weighing gold, had been found in those very same graves, thus demonstrating that the Greeks had at that remote period a full knowledge of weighing and also possessed the weight standard which they were held only to have borrowed some seven centuries later.

The orthodox school of archæologists, when I began to write, held that all weight standards that were used in the world, no matter where found, from Ireland to China, were derived from Babylonia. The Babylonians had made, it was alleged, a scientific system entirely unconnected with anything else that had preceded it. It was thus obtained. They took the sun's apparent diameter, whatever that may mean, and that became the Royal cubit. Then this was cubed

and became the Maris. One-sixth of this was taken, although they did not explain why one-sixth, and this became the Royal Talent. This was divided into sixty *Manehs* and each *maneh* into sixty shekels. Thus, then, the talent was supposed to be the first weight unit fixed. Yet investigation shows that all over the world, wherever men have discovered gold and use it, they quickly weigh it with the seeds of plants, which nature has placed as weights of great accuracy ready to hand. Thus the Incas of Peru had scales, and used seeds for weights. The West Africans used the Tacoo or Crab's eye, and the Damba, for weighing gold dust, long before any European had traded with them. The Assyrians themselves used a grain as their lowest unit, which I have shown from its weight to be a wheat grain. The wild tribes of Laos use grains of rice to weigh the gold dust from their streams, and as they value each little hoe which forms their lowest unit in a system of barter, which ranges from the hoe to the buffalo as the regular higher unit, and to the slave as the occasional higher unit, they have no difficulty in appraising in gold the value of any one of their commodities, whether slave, buffalo, earthenware jar, or piece of cloth.

By the application of this method I was enabled to show that the little *Talanton*, or weight of gold, used in Homeric Greece was simply the value in gold of a full grown cow, the ancient unit of barter and account, and that the Greek *stater*, the gold unit of later days, was nothing more than this primitive gold ox-unit. So far, then, from the Greeks starting with the Babylonian heavy talent as their unit, they had as their smallest weight (on no less authority than that of Theophrastus) the barley corn. In other words, they were just in the same position as ourselves, for our own Troy grain, as I have shown, is only the barley corn. The troy pound, on which our whole weight system depends, was constructed in 1760 from a comparison of the various troy pounds then in use in different centres. But these were old Tower pounds, which from the time of Henry VIII. had continued to contain 5760 grains instead of 7840, as had been the case under his predecessors. By the statute of Henry VII. it was enacted that all the weights of the kingdom should be based on the penny sterling, and that "the penny sterling or pennyweight should be of the weight of thirty-two grains of wheat, dry and taken out of the midst of the ear of wheat after the ancient laws of the realm." This statute was really but a re-enactment of laws in use since Anglo-Saxon times. Now an experiment showed me that four grains of wheat regularly equal three grains of barley, and as I found in an ancient Roman metrology that four grains of wheat equal three grains of barley, and as four to three is the relation between the wheat grains of Henry VII. and the troy grain introduced from France, there can be no doubt that the troy grain is the barley corn, which we know was used as well as the wheat grain in certain districts of the Roman empire, as well as in Greece.

Not only was the value of the full grown cow in gold the Greek standard, but it was also that of the ancient Egyptians, whose oldest gold unit is termed "ox-gold," and so also was it over all Asia and Europe.

Investigation showed that the value in gold of a full grown cow during a period of one thousand years from India to Ireland only varied from 140 to 120 troy grains of gold. This has for us a peculiar significance since our own gold unit, the sovereign, weighs 120¼ grains. It is really descended from the ancient gold unit based upon the cow, the primitive chief unit amongst all cattle-keeping communities in all periods of the world.

All races who have weight standards of their own, and not a few there be, have arrived at them, like the wild tribes of Laos and the West African negroes, by weighing gold dust against natural seeds. There is therefore no reason to doubt that the inhabitants of Greece learned to weigh gold for themselves by natural seeds, such as barley, and did not borrow the art of weighing from Asia, as held by the archæologists.

But this was not all. The numismatists had taken up the position that all the types on Greek coins were essentially religious. I need hardly say that this forced them into the direst straits, to explain, for instance, the victorious horse and jockey which Philip of Macedon, as we are told by Plutarch, placed on some of his coins to commemorate the victory of his race-horse at Olympia. No less difficulty had they in explaining the types of a mule-car and hare found on the coins of these two hapless sister communities, Rhegium and Messana, though Aristotle himself is our witness that Anaxilas, the despot of Rhegium, who had also captured Messana, placed these types on his coins to commemorate his victory with the mule-car at Olympia in 494 B.C., and his introduction of the hare for the first time into Sicily. Much as my essay was assailed, I was not deterred from working out the views there adumbrated. In 1892 I published my *Origin of Metallic Currency and Weight Standard*, in which I fully developed the anthropological method of dealing with the problem of the origin of weights of coinage and of coin types. I had already converted some political economists and a few classical scholars, but on the appearance of my book the conversion of the historians of trade and money was completed, and ever since, both in Germany and in this country, the soundness of the method has been recognised by scientific students of history. Yet there are still some Greek numismatists in this country who refuse to believe that some Greek coin types, such as the coins of Olbia in the shape of fish, and inscribed ΘΥ, and those of Cyzicus and Gades, which bear the figure of a tunny fish, can refer to the fisheries for which both those towns are famous in ancient literature. Still less will they believe that the tunny fish was ever a unit of barter or account in those towns, as the dried cod-fish, still the badge of Iceland, was and is still the unit of exchange in that island, and as the beaver, still seen on certain coins and stamps of Canada, represents the beaver whose skin formed, down to our time, the unit of account throughout all the Hudson Bay Company's territory. Nor will they believe that when gold or silver coins were struck there was any relation between the old barter unit and the new silver, although we know from good ancient authority that when Solon struck the first silver drachm at Athens, he equated his new drachm to the sheep and the goat, the old units of

account. These, down to his day, had continued, along with the cow, to be the unit of account in the laws of Draco, the old Athenian legislator.

It will thus be seen how difficult it is to get the old school of archæologists weaned from their love of *a priori* speculation and to yield obedience to the inductive method of anthropology, and at the same time to the voice of history. Some of the old school, however, have long since modified their position, and whilst abusing the author have not scrupled to adopt his ideas.

If the classical archæologists held that the people beyond the Alps had not even conceived the idea of measuring by the use of their own fingers, thumbs, arms and feet, still more unlikely was it that they should think it possible that there were elements, not only in the early population of Greece but in its greatest literature and art, which had come from beyond the Alps and from the dark aisles of the Hercynian forest.

When Schliemann, at Mycenæ, lifted the veil from a long-buried civilisation, he opened a new era in classical studies. The Germans, from the time of Wolff in 1788, followed by almost every scholar in this country, held that the works of Homer were based upon no material original, and that they sprung almost purely from the frenzied imagination of the divine poet or poets. Scholars, with scarce an exception, were rooted in the conviction that Achilles, Agamemnon and Hector were only forms of the solar myth, and that such peoples as the long-haired Acheans have never existed save in the fancy of the rhapsodists. To the received theory Schliemann's discoveries dealt a fatal blow. For a while fruitless efforts were made by some of the votaries of the ancient fetish to show that the relics laid bare at Mycenæ were those of the Byzantine period or that they were the work of Goths in the fourth or fifth century of our era. At the present day it is hard to conceive how any archæologist could maintain that objects, entirely of a Bronze Age, belonged to centuries long after Christ. But the classical archæologists had no scientific knowledge of their own department and were absolutely ignorant of all other fields of anthropological inquiry. But the struggle was in vain. The facts were too stubborn. At Mycenæ and Tiryns, round which centred, not only the great epics, but some of the greatest masterpieces of Greek tragedy, were discovered palaces and tombs replete with marvellous gold ornaments, bronze swords, inlaid daggers, pottery of beautiful fabric and graceful shape, engraved gems, and innumerable other objects. All showed that on these sites had flourished a people in much the same culture as that portrayed in the Homeric poems.

It was but natural that Schliemann and his followers should assume that he had discovered the actual remains of Agamemnon, king of men, and his Acheans. Henceforth, with hardly an exception, the Mycenean culture was regarded as Achean. But troubles were ahead. Some of the more intelligent remarked that whilst at Mycenæ and in other similar sites only bronze weapons were found, and that there was no trace of iron, the Homeric poems reveal an age when iron was in use for all sorts of cutting implements, knives, arrows, axes, swords, and for shoeing

even the plough. Since 1788 the critics had been engaged in dissecting the Iliad into what were supposed to be its original component elements out of which some rhapsodist or rhapsodists had patched up the great poem at a later time. The philologists had tried to detect older and younger strata of language, but they fell out amongst themselves and the linguistic test broke down. Then a comparison was made of the passages in which iron appeared, with the stratification of the critics, but unfortunately for the latter iron was found to appear more frequently in those passages which the critics considered the most ancient.

Then arose Dr. Reichel, who boldly made a Procrustean bed of the Mycenean culture, and ruthlessly chopped away every passage in which there was mention of iron, hauberks, bronze greaves, in short anything not found at Mycenæ. In this country Reichel's method was hailed with acclamation by almost all leading scholars, whilst not a few of them at once proceeded to proclaim it from the housetops as the latest gospel from Germany. I ventured to oppose the method as being utterly unscientific. I pointed out that the Mycenean age corresponded to the Bronze Age which we know so well in other parts of Europe and elsewhere, whilst the culture of the Homeric poems plainly corresponded to the Early Iron Age of central Europe, commonly called the Hallstatt period, from the famous cemetery of that name in the Austrian Tyrol.

In 1895 I offered a paper embodying these views to the editors of the *Hellenic Journal*, but it was refused by them. The late Sir R. C. Jebb, then President of the Society, on reading my paper, came to the conclusion that I had a good *prima facie* case, and through his action the essay, though sadly maimed and abbreviated, was allowed to see the light.

At the British Association in 1896 this paper was discussed and also another in which I had attempted a further stage in my investigations. In the latter I tried to show that iron had first been used as a metal in central Europe, and that it had thence made its way down into Greece along with the Acheans, and that it had not been introduced into Europe from Africa or Asia, as hitherto universally held. My views at once obtained the support of leading anthropologists, such as Sir John Evans, Dr. Munro, Professor Flinders Petrie, and S. Reinach. It may be worth mentioning as showing the attitude at that time of most classical scholars to the new method, that in the autumn of that year the Council of the Hellenic Society passed a resolution approving of the action of their editors in reference to my paper and condemnatory of my writings. Finally, in my *Early Age of Greece*, published in 1901, I expanded and added to my arguments, showing that the Homeric Acheans with their great stature and flowing fair hair were a tribe from upper Europe, the home of tall fair men. As Greek tradition itself declared, they had passed into Greece somewhere about 1400 B.C., and brought with them the use of iron, for cutting implements, the round shield with the boss known in Homer alongside of the oblong shield of the older population of Greece, the use of metal helmets, metal greaves, and hauberks, strengthened with metal plates, and the practice of cremating the dead. By a series of inductions I was

able to show that all these characteristics of the Homeric Acheans were features of the culture of the Early Iron Age of central Europe; that not only iron, but the alloy of copper called bronze, was the discovery of the central European peoples, and that the brooch, which is unknown in the shaft graves of Mycenæ, but is a characteristic of Homeric dress, was brought down into Greece by the Acheans also. As hitherto it had been assumed that the brooch was invented in Greece, and had passed up into central Europe, it had been used as the basis for the chronology of the Bronze and Early Iron Age of all Italy, central and upper Europe, by Montelius and every one else. The change in the place of origin of the brooch which I was able to prove had thus a far more important bearing than might be supposed at first sight. So far from all the culture of Italy, central and upper Europe, in which the brooch appeared, being later than certain brooches found, not in the shaft graves, but in the lower town at Mycenæ, and which were dated not earlier than 1400 B.C., it turned out that, as far older forms than these were to be found in northern Italy, the beginnings of the brooch went back long beyond 1400 B.C. in central Europe. Consequently the dates of the late Bronze Age and early Iron Age had to be pushed back by many centuries.

Besides this I was able to point out that the peculiar style of decoration, which became universal in Greece after the Mycenean culture had faded away, and which is commonly termed the Geometric or Dipylon, was really identical with the style of decoration of the Danubian region and central Europe, and that it too had come into Greece with the Acheans. My old critics now admit that iron, bronze, the round shield, the brooch, the geometric style, and the practice of cremation passed into Greece from central Europe.

Later, I have been able to show that two of the chief characteristics of the temple architecture of Classical Greece—the gable and the running frieze—are due to the Acheans who brought with them the gabled house of upper Europe, such as those of Achilles and Odysseus mentioned in Homer, whilst the running frieze is simply an adaptation to purposes of architecture of the characteristic processions of men and animals found in the art of central Europe.

Wolff and his followers had urged as a chief argument against the early date of the Iliad and Odyssey the difficulty of handing down poems of such length without the art of writing. True, it was admitted that the *σήματα λυγρά* inscribed by Proetus, King of Tiryns, in a folded tablet and brought by Bellerophon to the King of Lycia, who was plainly able to read their message, were some sort of rude picture writing. But such rude symbols, it was contended, were very far removed from writing. The brilliant discovery of my friend Dr. A. J. Evans has given the quietus to such arguments for ever. Having noticed on "Mycenean" gems certain symbols not unlike those of the Cypriote syllabary, he was led to the conclusion that the symbols on the gems were really a form of writing, and his discoveries at Cnossus have now shown that pictographic and linear scripts were in common use in the Ægean for several thousand years before our era.

On the other hand, there are lingering survivals of Reichelism, as in the case

of Professor G. Murray, who would still cut out as late from the Iliad every mention of a hauberk, thinking that such were only added in later times by Ionian poets. The same writer, so far from regarding the great stature and long fair hair of the Acheans as a mark of race, considers that they wore their hair long because they were under a vow of chastity till they had captured Troy. There is no mention of such a vow in either Iliad or Odyssey, whilst the great quarrel in the Iliad is for the possession of Briseis, the concubine of Achilles, taken from him by Agamemnon. Agamemnon was certainly under no vow of chastity, for he has to swear a solemn oath to Achilles that during the time that Briseis was in his tent he had not treated her as his spouse, an entirely superfluous act if he had been under vows of celibacy. Moreover, when Achilles recovers Briseis, he and she live together in his hut as man and wife (Iliad, xxiv). Professor Murray, who is one of the contributors to the Oxford volume of Essays, cannot be said to have grasped the scientific method, which is the essence of the new anthropology. He brings to bear on what are really anthropological problems the *a priori* method so beloved by the pure classical scholars, who are ready to speculate about things Greek and Roman in a way that no sane person would think of applying to the Italians and Italian culture of mediæval times. But we must always expect lingerers and survivals.

War still rages round the early period of Greece, but in spite of this it is already patent that the encumbrances of pedantry are falling away from Homer, and that before long *a priori* discussions on the meaning of Homeric terms and the genuineness of Homeric passages will have given way to a few precise facts derived from material remains and the traditions of the ancients themselves—an inestimable blessing for those who wish to drink deep from that pure well of ancient Greek too long defiled by the wranglings of the verbalists.

But it is not only in Homeric studies that anthropology can render service to the classical scholar. In the Greek tragedy there is also scope for its application. Down to recent years it has been universally held that Greek tragedy arose in the worship of Dionysus, the Thracian god of wine, and that it was at the vintage festivals that tragedies were always performed. But now we know better. The festivals of Dionysus all fall in winter and spring, not in the vintage season. Some four years ago I pointed out that tragedy originated in Greece long before the Thracian god Dionysus ever was worshipped there, and that in Greece, in India, in Thibet, in China, in the Malay peninsula, and wherever there is a native tragedy, it has originated in the worship and propitiation of the dead. Such too is the origin of the early mediæval Christian drama, as for instance the passion plays still represented by that periodically performed at Ober Ammergau.

Amongst the great masterpieces of Greek tragedy at least one old riddle has been solved by the anthropological method. In the *Choephorae* of Æschylus, Electra, daughter of Agamemnon, on visiting her father's tomb arrives at the conclusion that her long lost brother Orestes has come home, because she finds on it a lock of hair like her own, and because the footprints in the soft clay near the tomb resemble the contours of her own feet. This of course was a great crux to

the older scholars. But I pointed out that as the royal Achean house was fair-haired, dwelling amidst subjects of the dark aboriginal race, Electra's inference was thoroughly sound. Her brother and she had fair hair, and the shape of the northern foot differed from that of the small dark race of the south. This view has now been adopted by Professor Tucker in his well known edition of the *Choephorae.*

As I have already indicated, classical learning in this country by its petty verbalism, its pedantry and its indifference to scientific methods, has roused a great reaction against its continuing to form an essential part of our higher education. The assault, on Greek in particular, which has been made in recent years, is wholly due to the classical scholars themselves. The success of classical studies in the future will depend altogether on how Literature, Verbalism and Anthropology are bound up together.

The right view, I venture to think, is, that language is the key by which the student gains admission into that treasure-house, in which the true kings of the ancient world—the poets, the philosophers, and the historians—have left us stores of untold wealth. Anthropology comes, and with her lamp illumines for the searcher many crevices and corners of that treasury, and reveals to him many beautiful and priceless gems, of which he would otherwise never have suspected the existence. It is on the properly regulated interrelations of these three departments that success in classical studies must depend. What, then, ought to be our ideal in practical life of the relations of anthropology to classical studies under modern conditions? As it is the literature of Greece and Rome which is the eternal element, and as no classical archæology can have any real value unless it is based upon a sound knowledge of the literature and language, we can at once lay down that anthropology in our educational system, both at school and in the university, must be regarded as ancillary to the study of the great writers of antiquity.

Thus conceived and thus treated, archæology and anthropology become invaluable servants, for they enable us to grasp the meaning of the ancient writers and comprehend allusions, otherwise obscure, to enhance our enjoyment of the scenes which they describe, and to realise, in a way impossible to the mere pedant the conditions under which the ancients lived and moved and had their being.

It will be admitted that some knowledge of mediæval archæology and habits and customs is essential for the proper understanding of Shakespeare and Chaucer, who, after all, wrote but a few centuries ago, and that, too, in our own language, and under conditions not very unlike our own. How much more necessary is it to make use of every means at our disposal to enable us to place ourselves at the standpoint of the creators of those literatures which grew up two thousand years and more ago in southern lands, and in environments very different from those in which we ourselves live. It is infinitely harder for us to place ourselves at the standpoint of an Athenian of the age of Pericles than at that of an Englishman in the reign of Elizabeth. Hence in order to appreciate to the full the literature

which mirrors the life and thought of the time, we must spare no pains in familiarising ourselves with the way in which the Greeks and Romans looked at life and death, and with the objects with which they were surrounded, as well in death as in life. Furthermore, the end of such studies is not merely the elucidation of obscure passages in classical authors, but what is far more important—the training of students to project themselves out of their own narrow surroundings and to think, if they possibly can, as people did in the time of Shakespeare and Chaucer. Still better is it if they can be taught to realize the attitude, towards life and its problems, of the Greeks in the age of Pericles and the Romans of the time of Augustus.

It is of especial importance in the education of those who are in many cases to be brought into close contact with men of other race, as Indian civilians Colonial administrators, or as traders and missionaries, to learn to place themselves at the standpoint of peoples reared in climates and countries very different from ours, and whose way of looking at life, society, and the problems of religion, are totally alien from ours. Only men who have this power, either by nature or by training, can become sympathetic and wise rulers and officials, whilst the same quality is no less essential for the success of the missionary and the merchant.

When we pass to the literature of the classical period, the same method may be applied with equal advantage. Is the student reading Herodotus or Thucydides replete with the marshalling of hosts, the tramp of armies, and battles by sea and land, and the siege and fall of fortresses? If he is to appreciate what he reads, he must have some knowledge of the warfare of the period, and the equipment and weapons of the warriors. But this is not all. Herodotus is full of the most interesting folklore. Herodotus lays bare to us the religious ideas and customs, not merely of the Greeks but of many other races. His statements were long considered to be but falsehoods, and unworthy of credence by men of sound judgment. It is not merely material objects, such as great temples and the statues that adorned them, the study of which gives new life and a broader basis to the study of the classics. Anthropology has made great advances in the last quarter of a century, and we now know as ascertained facts many phases of society—forms of kinship, marriage and inheritance,—not dreamed of fifty years ago. Through lack of such knowledge, classical scholars of the greatest eminence have fallen into errors, which in the light of the present day strike us as almost ludicrous. A single example will suffice. Grote has a fine passage in which he speaks in glowing terms of the devotion to the State and the self-abnegation of the Spartan husband, who, in the desire that stalwart sons should be produced for Sparta, did not hesitate to share his wife with another. Yet we now know so far from this degrading practice being the outcome of a lofty patriotism, it is simply an example of two well known forms of polyandry, both the wider form and the more restricted type, commonly termed the Tibetan, wherein several brothers share one wife.

The Greek and Roman writers are full of allusions to social habits, manners and customs, which have perplexed the older scholars, at the same time giving them opportunity for much wild speculation. Yet many of these, when studied in the light of anthropological research, are capable of simple explanations, to be understanded of all.

But it is not merely for the elucidation and defence of passages in ancient writers that the results of anthropology are most important. Modern discoveries are revolutionising our attitude towards the ancient historians themselves. It has been too long the fashion for those who thought that they were following Niebuhr, but who really did not understand his method, to cavil at and doubt the statements of Greek and Roman historians. The easiest way by which a man could earn for himself the reputation of a keen critic with great speculative insight was to declare that Thucydides had invented the whole story of the siege of Plataea, or that Herodotus had no warrant, save his own imagination, for his tale that at Naucratis in Egypt there was a flourishing Greek colony with a temple in honour of the Milesian Apollo; yet within a year after the latter charge had been made in a certain edition of Herodotus, Professor Flinders Petrie discovered the site of Naucratis, laid bare its streets and found the temple of Apollo, as was proved by the dedicatory inscriptions to that god incised on numerous objects. But valuable as are the services of the various branches of anthropology in rehabilitating the credibility of Herodotus, Pausanias, and others, she is doing a far greater work. Behind the rehabilitation of this or that historian there lies a far more important principle.

When we find case after case, in which the old writers are proved to be trustworthy in their statements respecting monuments, religious and social institutions, our whole moral attitude is changed, and there is little doubt that amongst the younger generation of scholars the influence of anthropology is silently and steadily lessening that pettifogging spirit of scepticism which thinks that the only way in which a man of ability can show that ability, is to bring allegations of deliberate invention, or, at least, of grave perversion of facts against this or that author.

Already anthropology is making itself widely felt in the study of history, and we may confidently look forward to its increasing influence year by year, as fresh discoveries continually keep confirming the accuracy of the literary traditions. Hitherto I have been speaking of Greece. If we turn to Roman history, the circumstances are just the same. Dionysius of Halicarnassus, following the records of older writers now lost, has told us the story of the early inhabitants of upper and central Italy, but his statements were and still are generally discredited by what is called the pure historian.

Dionysius tells us that the oldest inhabitants, whom he terms the Aborigines, were being gradually conquered or driven back into the Apennines by the Siculi and Umbrians, when the Greeks first planted colonies in central Italy. The Aborigines helped the Greeks against their great enemies, the Umbrians and the

Siculans, and for a time apparently the combination of Greeks and Aborigines kept the Umbrians in check. Then later came Tyrrhenians or Etruscans from Lydia, in Asia Minor. They seem to have been welcomed by the Greeks to aid them against the ever advancing Umbrian tribes, and presently the powerful Etruscan confederacy captured no less than 300 Umbrian towns, and that people only maintained their independence in the region known as Umbria in Roman times.

About 400 B.C., the Gauls descended in force from the Alps and dealt a blow to the Etruscan power from which it never recovered. They advanced to the Tiber, defeated the Romans on the Allia, and captured Rome herself. Bought off by Roman gold they retired northward, but henceforward they occupied a great part of north Italy extending as far south as Bononia (Bologna) and Sena Gallica (Sinigaglia). Finally, the Romans expelled or conquered the Gauls.

Modern investigations, for instance at Bologna, show us the successive strata. The remains of the Roman period are easily identified by coins and inscriptions.

Next come graves with the remains of large men, associated with long iron swords, and with accoutrements and a style of ornament familiar on Cæsar's battlefields, where he overthrew the Helvetii and Boii, and in the graves of Gaulish chiefs in the valleys of the Marne and the Seine. There can be no doubt that we have here the relics of the Gauls who had occupied Bononia.

Then come the Etruscan tombs, easily distinguished by their peculiar form, the dead being laid at full length and never burned. Then comes the stratum belonging to the Early Iron Age, containing relics similar to those which are found over all Italy wherever the Umbrian tribes settled, and there can be no doubt that these are the relics of the Umbrians. Finally, we meet, all over upper Italy, especially in the Po valley, in Latium, and as far south as Tarentum, the remains of a culture known as the Terramare. This goes back far into the Neolithic period and continues through the Copper and Early Bronze Periods.

It is chiefly found in lake-dwellings in the plains of the Po, and the region occupied by Ligurian tribes, such as the Libui, in historical times. There can be little doubt then that we have, in the earliest culture, the remains of the Aborigines of Dionysius, who were driven into the Apennines by the Umbro-Siculan tribes. Now, when we learn from Philistus of Syracuse, that the Ligyes or Ligurians occupied all central Italy, both north and south of the Tiber, including the site of Rome, we are justified in believing that the Aborigines who dwelt in Latium, as well as in upper Italy, were Ligurians. What was Mommsen's attitude towards the traditions contained in Dionysius? He totally disregarded all statements about the Aborigines and held that the legend that the Tyrrhenians had come from Lydia was a pure invention. On the strength of Corssen's guess that the name Rasenna, found only once in literature (and that too in Dionysius, where it is probably a mistake for Trasenna) was identical with Rhaeti, he regarded the Etruscans as Rhaetians from the Alps. But we now

know the cemeteries of the ancient Rhaetians in the Alps, and, as might have been expected, they burnt their dead, and disposed of their ashes in the same way as did their kinsfolk the Umbrians, whereas we have just seen that the Etruscans never burned their dead.

Nor was Mommsen more felicitous in his attitude towards early Roman tradition. It was held by the Romans themselves, that the Patricians differed essentially in race from the Plebeians. But Mommsen and his followers in this country would have none of it. He simply laid it down that the Romans were a homogeneous people.

In 1902, I ventured to give some reasons for believing that the ancient traditions were right, and that the dissensions between Patricians and Plebeians were far more deeply rooted than in a mere struggle between capital and labour. The excavations of Boni in the Roman Forum have since shown two different kinds of graves, the one, cremation, and the other inhumation burials. This most important archæological fact taken in conjunction with the different kinds of marriage, the one Patrician, the other Plebeian, the different armature of the original First Classis, consisting wholly of Patricians, as compared with that of the other Classes, into which Plebeians were enrolled, as well as the fact that the three chief Flamines who must be Patricians ministered to Sabine deities, all combine to show that the Patricians were Sabines, the Plebeians the aboriginal population.

Hitherto I have only spoken of the obligations of literature to anthropology, yet I am not unmindful of the equally great obligations of anthropology to literature. The older scholars, very properly, viewed with suspicion and contempt the lucubrations of the *dilettanti*, who wrote learned dissertations to prove all sorts of wild theories respecting the history and the uses of any chance object that fell into their hands, or the meaning and origin of any ceremony and custom which they came across, without any reference to documentary evidence. The archæological side of anthropology could make no real progress as long as she was divorced from literary records. Even in reference to objects not more than two centuries out of use there can be no certainty, unless we resort to the literature of the time, and the same holds true for many objects, customs and ceremonies which have been in use amongst primitive races, now almost obliterated, if not wholly extinct, or whose primitive customs have now completely disappeared. As soon as we find a good passage in some old writer, the relic which has long baffled us is at once explained. Mere collections of antiquities and ethnological curios, not illustrated by historical or contemporary documents, are robbed of a chief part of their value, unless they be works of art, which are beautiful and precious in themselves.

I shall illustrate my meaning by one or two examples. Two visitors wander through some great armoury gazing at the suits of tarnished mail and at the weapons rusting on the walls, never more to be taken down and sharpened by the soldier in all the joyance of war. For the uncultured sightseer these relics have neither life nor voice. At most they only rouse a momentary curiosity, as

the label informs him that this sword or that breastplate belonged to some princely personage. But for the other who knows his Froissart or his Joinville or rugged old Villehardouin, spectral hands grasp once more their mighty swords and the clang of steel is heard on casque and shield. Or take an example from a more remote epoch. Many of you have seen in museums the remains from the lake-dwellings, so common in Switzerland and which are similar to the crannogs common in Ireland and Scotland, and occasionally found in England, as, for instance, the lake village at Glastonbury. As you stray through such a museum, the eye wanders over the varied mass of implements of stone, bone and horn, broken weapons, and strange and curious tools and ornaments. You seem to be walking through a valley of dry bones, and you give utterance to the cry, "Can these dry bones live?" Yes, they can be made to live for you once more by the revivifying touch of literature. You all remember the description given by Herodotus (v, 13) of the pile-dwellers of Lake Prasias in Thrace, who planted strong piles in the lake, the whole community joining in the task, how they built on these wooden platforms, approached by a long wooden bridge or gangway from the shore; how they raised their frail cabins on these platforms, and how they arranged for the renewal of the piles by the rule that for each wife a man married he must drive in three piles. Take this passage and read it as you gaze at the broken and decayed relics from a Swiss pile-dwelling or an Irish crannog. At once there is "a noise and shaking and the bones come together, bone to his bone; the sinews, too, come up on them, and then they are once more clothed in flesh, and the skin grows over them." Finally, the very breath of life seems to be infused into the ancient owners and they rise up before us as in life.

This last example will suffice to show what a debt authropology owes to literature, and at the same time to demonstrate what anthropology can do for her partner. No story of the old Halicarnassian excited more scepticism than his narrative of the brave lake-dwellers of Prasias who defied successfully the lieutenant of Xerxes in their watery fastness. But that is all changed now. The discovery of pile-dwellings in many regions of Europe, including the Balkan itself, has demonstrated that at no very distant epoch a large proportion of the inhabitants of Europe lived in the fashion described by Herodotus.

There is really no antagonism between Literature and Anthropology. Each is absolutely necessary to the other, if both are to be studied as they ought. But as Literature is the highest exposition of the spiritual side of Man, whilst Anthropology is chiefly, though by no means entirely, concerned with his material side, and as things spiritual must stand above things material, so must Literature have the foremost place, whilst Linguistic also must bow to her sovereignty. On the proper subordination of Linguistic and Anthropology to Literature must depend the success of classical studies. I may illustrate my meaning by an allegory borrowed from Plato, when, in the *Phædrus*, he describes the tripartite nature of the soul. First, there is the Intellectual element seated in the head; secondly, the Passionate, whose seat is in the breast; and finally, the

Appetitive, seated in the abdominal region. He likens these three to a charioteer driving a pair of steeds along the plain. As long as the Intellectual, as charioteer, keeps control of his two steeds, the Passionate and the Appetitive, all goes well. But as surely as one or the other turns restive, disaster ensues, and one more is added to the many wrecks that already strew the plain. So, too, is it with classical studies. As long as Literature keeps under due control her two steeds, Anthropology and Language, all goes well. But so surely as the passionate impulse of the archæologist or anthropologist leads him to disregard the monitions of his charioteer, or the morbid appetite of the verbalist for picking holes in sound texts refuses to be curbed, disaster must inevitably result for classical studies. To take another metaphor, if these three elements be properly combined and interwoven, they will form a threefold cord which is not quickly broken; nay, not a cord, but a stout cable, which for generations to come will give safe mooring to classical studies in every system of higher education.

SOME TECHNOLOGICAL NOTES FROM THE POMEROON DISTRICT, BRITISH GUIANA.

(Part I.)

By Walter E. Roth, Local Correspondent of the Royal Anthropological Institute.

[With Plates I–X.]

The Pomeroon District comprises the area of country drained by the Pomeroon and Moruca Rivers, two comparatively small streams emptying themselves into the Atlantic immediately to the north of Essequibo river. In addition to a negro and Creole population it is occupied by a large number of Arawaks, a smaller proportion of Caribs, a fair sprinkling of Warraus and a few Akawaios. The following notes have been prepared as the result of investigations amongst these Indians.

With regard to the identification of any plants, etc., that may be mentioned, I have so far not been able to check the scientific names, but give them here on the authority of Im Thurn.

The three subjects I propose discussing in this paper are the procedures adopted in preparing the strands for plaiting, and their manufacture into a cassava-squeezer and Arawak fan respectively. I have had to specialise the latter, because there is a Warrau fan, plaited not only with different material, but on an entirely distinct model.

1. The Splitting of the Strand.

Astrocaryum tucumoides, the *akko-yuro* of the Arawaks, the local "pimpler" palm. The leaf, as yet unopened, is cut off and the septa pulled away from above down, one by one. Each septum is stuck in its long axis at about the middle with a knife-blade which is then run up to the apex, the basal part of the septum being split by separating with the hands. The strands so formed shrink considerably and hence can only be satisfactorily worked at in the early mornings when the atmosphere is still damp; if plaited when too dry, they slip one from the other. For similar reasons, the leaf, as yet unopened, once removed from the tree, can only be kept for a few days, and then in the cool shade, to be of any use. Each strand is of course not of uniform width, but diminishes from butt (proximal) to apex (distal). Used for making fans.

Carludovica plumierii, the *mamúri* of the Arawaks. Suitable lengths of the aerial stems having been cut, they are soaked in water continuously for as long as three weeks. At the end of this period, the outer bark is scraped off with a knife and the stem split, according to its size, into two, three, or four portions, which are plano-convex in section (Plate I, Fig. 1). The remaining innermost portions of the stem can also be split again for use, but such strips are not so strong as those first removed. In this district it is certainly invariably split before use for certain baskets.

Ischnosiphon sp., the *itiriti* of the Arawaks, *mukkru* of the Creoles, etc. The stems of this reed, reaching to a length of 9 or 10 feet, can be used immediately after cutting, but may keep for a couple of weeks and more, provided they are in a cool shade: exposure to the sun dries up and spoils them. When required to be put to use, the stem is first of all scraped of its outer green cortex, and then may be stained with certain black, red, or other dyes: the outer green cortex may, however, be left on the strand in the manufacture of cassava-squeezers for Indian domestic use, and of crab-quakes (*i.e.*, baskets for carrying crabs). After nicking a ring about ½-inch from its extremity right round, the stem is split down cross-wise,—the four primary splits—to a depth of about 7 or 8 inches, and the pith more or less removed from below up, and each quadrant divided again by secondary splits (Plate I, Fig. 2, *a*, *b*, *c*). After removing some more pith (*d*, *e*), the four primary splits are extended throughout the length of the stem by gradually and carefully separating them with the hands held laterally (Plate I, Fig. 3). The secondary split in each quadrant is next extended in similar fashion, with the result that, from each *itiriti* or *mukkru*, eight strands are derived. If an unusually large stem, the Warraus, as well as the Arawaks, occasionally may split each quadrant into three, so as to derive twelve, instead of eight strands, but under these circumstances they are said never to split evenly, and the procedure is not orthodox. Where the circular nick has been made in each of these eight strands, the knife (Plate I, Fig. 4), slices downwards in such a way as to separate an outer from an inner (more pithy) portion, which portions are next split apart by using the inner side of the nail of the left fore-finger as a wedge, and gradually, but firmly, pulling on the inner of the two portions with the right hand (Plate I, Fig. 5). The nail of an expert basket-maker, etc., is thus often observed to be chronically damaged. The outer strand is finished off ready for use by scraping its edges, not its surface, firmly and slowly over a knife-blade (Plate I, Fig. 6), until the required width is produced, and in its finished state is called *itiriti dabusha* (*i.e.*, scraped, cleaned). Employed for cassava-squeezers, pegalls, sifters, certain baskets, etc.

2. THE CASSAVA-SQUEEZER.

Terms.—The Arawak Indians differentiate the component parts of a cassava-squeezer (Plate II, Fig. 1), into head (*a*), mouth (*b*), body (*c*), and ankle (*d*). These terms I propose utilising, with the modification of the last-mentioned into an

ankle-ring, at the same time introducing a new element, the leg (*e*), between it and the body proper. For technical purposes the head (Plate II, Fig. 6) consists of a collar (*a*), through which the article is hung, and neck (*b*), while the body may be regarded as constructed of a shoulder (Plate II, Fig. 6, *c*), shoulder-girdle (Plate II, Figs. 9, 10, 11, *a*), body proper (*b*), and hip-girdle (*c*), and it is on these lines that the manufacture of the squeezer as a whole will be described.

Nomenclature.—The names for a cassava-squeezer are: *yuro* (Arawak), *aruhuba* (Warrau), *matapi* (? Carib). The Arawak terms for the different parts are: *yuro-(t)ishi* (head), *yuro-(to)noroko* (mouth), *yuro-(ti)firo* (body), and *yuro-(to)toro* (ankle-ring), but when the ankle-ring is made all in the one piece with the four tassels tucked inwards—the orthodox way—it is spoken of as the *totoro-ado.*

The cassava-squeezer is only made by men, and appears to have been adopted within recent times by the Arawaks as a substitute for the cone-shaped basket which is now rarely to be met.

Foundation.—A commencement is made by plaiting at their centre a set of *itiriti* strands into another series laid at right angles. As often as not, with a view perhaps to bringing out the pattern more distinctly or for other reasons, the elements of one set are laid on their outer surfaces, those of the other on their inner. The staining of the strands is not adopted for squeezers destined for domestic use. The plaiting process consists in passing each strand alternately under and over a set of three, each such strand at the point of under- and over-lapping being always in advance of the one immediately preceding it, to the extent of its own width. The resulting stepping-stone arrangement is seen in Plate II, Fig. 2, where the squeezer is being manufactured on a foundation of sixteen strands, nine of which are placed horizontally and seven vertically. But in the larger varieties, twenty-four, twenty-eight, or thirty-two strands may be employed in the foundation, and under such circumstances there will be respectively thirteen, fifteen and seventeen placed horizontally, with eleven, thirteen, and fifteen vertically. Furthermore, for the larger specimens, which measure, on the stretch, well over 6 feet, the *itiriti* strands, which are continuous throughout the whole extent of the article, may not prove sufficiently long: in these cases a commencement is made by superposing each two strands to the extent of about 6 inches and plaiting them at their centres of superposition as if they together constituted but one. Another advantage of this "doubling" process is that it affords the proportionately extra strength now required.

Collar.—Once completed, the rectangular foundation is turned round on to its diagonal axis, so as to represent more or less the conventional diamond (Plate II, Fig. 3). The strands projecting from the upper and lower portions of one side of this diamond are next plaited into one another in such a manner that, as each successive strand reaches the lines, which will ultimately limit the upper and lower edges of the collar now in the course of formation, it is bent backwards, outwards and downwards at the former limit, backwards, outwards and upwards at the latter. More than this, subsequently to the bending, each

successive strand passes behind two others before it rejoins the plait. The plait is continued to form this band until such time as three strands alone remain at its lower outer corner (Plate II, Fig. 4). Occasionally, during the bending process, each strand may pass behind three others; but four free ones will then have to be left at the lower corner. Half the collar being now finished, it is turned on its other side, and the remaining half completed in similar fashion.

The two lateral edges of the collar, which is bent on itself into more or less of a ring, are then plaited together and constitute the neck (Plate II, Figs. 5, 6, *b*).

Body.—To form the shoulder (Plate II, Figs. 5, 6, *c*), additional strands placed parallel with the free side of the collar just completed are plaited into those stretching therefrom, the former being ultimately worked in amongst themselves by the bending process (already described) upon reaching the limits of what the Indians call the mouth. When finished, the shoulder forms with the lower half of the collar a triangular surface with its vertex the scapular point (*b*) downwards.

The number of additional strands inserted for the manufacture of the shoulder may be the same as that of those employed in the foundation (*e.g.* 9 + 7 = 16 in the present instance), any extra being put in with the view, not only of increasing the capacity of the future body, but also of insuring that the total number—foundation, additional, and extra—together constitute some multiple of three. These essentials may be tabulated as follows:—

Foundation.	Additional.	Extra.	Total.	Approximate number of stems used.
16	16	1 (or 4)	33	4
20	20	2 (or 5)	42	5
24	24	0 (or 3)	48	6
28	28	1 (or 4)	57	7
32	32	2 (or 5)	66	8

It thus comes about that the size of a cassava-squeezer is gauged by the number of *itiriti* stems (or *mukkru*, to use the Creole term) used in its manufacture, eight strands, as already shown, being allowed to each stem. Instead of describing the article as being so many feet long, or of such and such cubical capacity, etc., the Indian simply speaks of it as so many *itiriti*. Those of six and eight *itiriti*, the largest manufactured, are orthodox, *i.e.*, employed for actual domestic use, those of seven *itiriti* I have never seen, while all those of a lower denomination are made for sale as curios, etc., to tourists and others. Though two squeezers may be made of the same number of stems, their length is not necessarily identical, this varying with the height of the rafter on which they are intended to be hung. It must not be forgotten that in the larger varieties the additional and extra strands may also be "doubled" as were the foundation strands.

Shoulder-girdle.—The two upper angles of the triangle surface (Plate II, Figs. 5, 6), formed of the shoulder and lower half of the collar, are next plaited and joined (Plate II, Fig. 7), the space intervening between the two free sides being filled up by a continuation of the process, with the final result that extending from between the mouth to the level of the scapular point, there is now formed what may be regarded as the shoulder-girdle (Plate II, Fig. 8). When the number of strands employed in the construction of the shoulder is not in accordance with the essentials laid down in the preceding table, the lower level of this shoulder-girdle will show an interspace, the width either of one or of two strands: owing to carelessness, hurry, or forgetfulness, such a contingency will often happen, but it can easily be met by inserting within the lacuna the necessary one or two required. Though, under such circumstances, the skill and dexterity of the artificer may be called in question, the article is not one whit the worse for it from an economic point of view.

So far, the pattern followed in the plait has been the same all the way through—a horizontal series of exposed pieces of strand leaning on the slant upon another series, above and below, bearing in the opposite direction (Plate II, Figs. 9, 10, 11*a*). This in fact gives the pattern its Arawak name of *a-yure-dahu* (to lean against).

Body proper.—With the formation of the body proper, however, the pattern changes from horizontal to vertical, the plaiting now taking on one or other of three forms, the *assa-uda* (Plate II, Fig. 9*b*), the *abuna-buna-tahu* (Plate II, Fig. 10*b*), and the *aha-(h) abba-dahu* (Plate II, Fig. 11*b*). The first is so named after the *assa*, a particular fish with hard scales which the pattern closely resembles, and *tuda*, the skin: the Warraus, however, speak of the pattern as a pathway cleared by *kushi* (ants). *Abuna-buna-tahu* is the plural form of *tabuna* (a bone), the term applied to any little piece of exposed strand in a plait-work. It is a pattern which by its very construction has to be worked in more or less of a spiral, but instead of continuing each spiral throughout the length of the body proper, it may be reversed after a time, then brought back to its original direction, and so on alternately: if the reversing process is followed, the resultant pattern as a whole gives rise to the appearance of vertically arranged very open zig-zags. The term *aha-(h)abba-dahu* is adapted from *habba*, the four-legged cassava-basket, the sides of which are always plaited in this (the orthodox) pattern: the Warraus, however, describe this pattern as the *wamma-ahabba* or *kamudi* (snake-mark).

Hip-girdle.—When the body proper has been thus constructed to the required length, the plait, whatever its pattern, reverts to the original or *a-yure-dahu* form of which three or four, of course horizontal, series are made: these constitute the hip-girdle (Plate II, Figs. 9, 10, 11*c*).

Leg.—Starting from the centre of the lower border of this hip-girdle, front and back, the strands are divided and plaited to form two lateral triangular lappets (Plate III, Figs. 1, 2*l*), with the result that the free ends of the strands form four groups or tails, two of which are anterior (*a*, *c*) and two posterior (*b*, *d*).

By passing successive sets of two strands, each from one anterior tail, alternately over and under corresponding successive sets of two strands, each from the other (Plate III, Fig. 3), and repeating the process with the posterior tails, the four groups of free strands will of course change places, the two at the back coming to the front, and *vice versâ*, while the lappets are being simultaneously pulled into closer and closer apposition (Plate III, Fig. 4). Next comes the plaiting together on each side into a band (Plate IV, Fig. 1, *m*, *n*), of the anterior and posterior groups (*i.e.*, *a* with *b*, and *c* with *d*), the original under- and over-lapping of three strands at a time being reverted to, but with the very important proviso that every two strands are superposed and plaited together as a single one.[1]

In consequence of the former process, the lappets become gradually more or less surrounded and hidden: in consequence of the latter, the sectional area of the cylinder is first greatly reduced while the cylinder itself next disappears in direct proportion as the two lateral bands (resulting from the plaiting together of the anterior or posterior groups of strands on each side) come into being.

Ankle-ring.—Save that every two strands are superposed and plaited together as a single one, each of these flat lateral bands is constructed on exactly the same lines as the original collar, the outer edge being "bent" in similar manner, the exact number of strands so treated varying with the size of ankle-ring required. Suitable lengths being selected, these two bands are plaited together (Plate IV, Fig. 2) to form the ring, the four groups of strands (*w*, *x*, *y*, *z*), resulting at their junction, being worked off, tied at their extremities (Plate IV, Figs. 3, 4), and folded inwards so as to be tucked into the concavity (Plate IV, Fig. 5) of the ring.

3. THE ARAWAK FAN.

Terms.—For descriptive purposes, an Arawak fan may be regarded as composed of a blade and handle, the former consisting of a body and two wings (Plate VI, Fig. 1*w*); the body is made up of a foundation (*a*), a super- or substructure (*b*, *c*, according to the pattern), and two gables (*d*). Made by men.

Arawak nomenclature.—A fan is called *warri-warri*: the two halves of the handle are the *tajike* (ears): that portion of the blade in its immediate neighbourhood is the *tishi* (head): its opposite edge the *tishi-hudi*, the lateral edges *taramakondi*, the front or upper surface *tajako-mária*, and its back or lower surface *tabong-mária*.

Initial procedure.—The initial procedure will vary with the design introduced on the blade, the only constancy prevailing being that after the strands of split *astrocaryum* have been arranged, with their points all in the one direction, the plait commences, not at their respective centres (as in the cassava-squeezers), but at a spot distant about a third of their lengths from the wider or butt (proximal) ends. The three designs found are the *bai-yari-shiri* (Plate V, Fig. 1), the

[1] When, after each set of two has been worked in, it is found that there is a strand over, it must be superposed on the adjacent double strand, and all three plaited together as a treble.

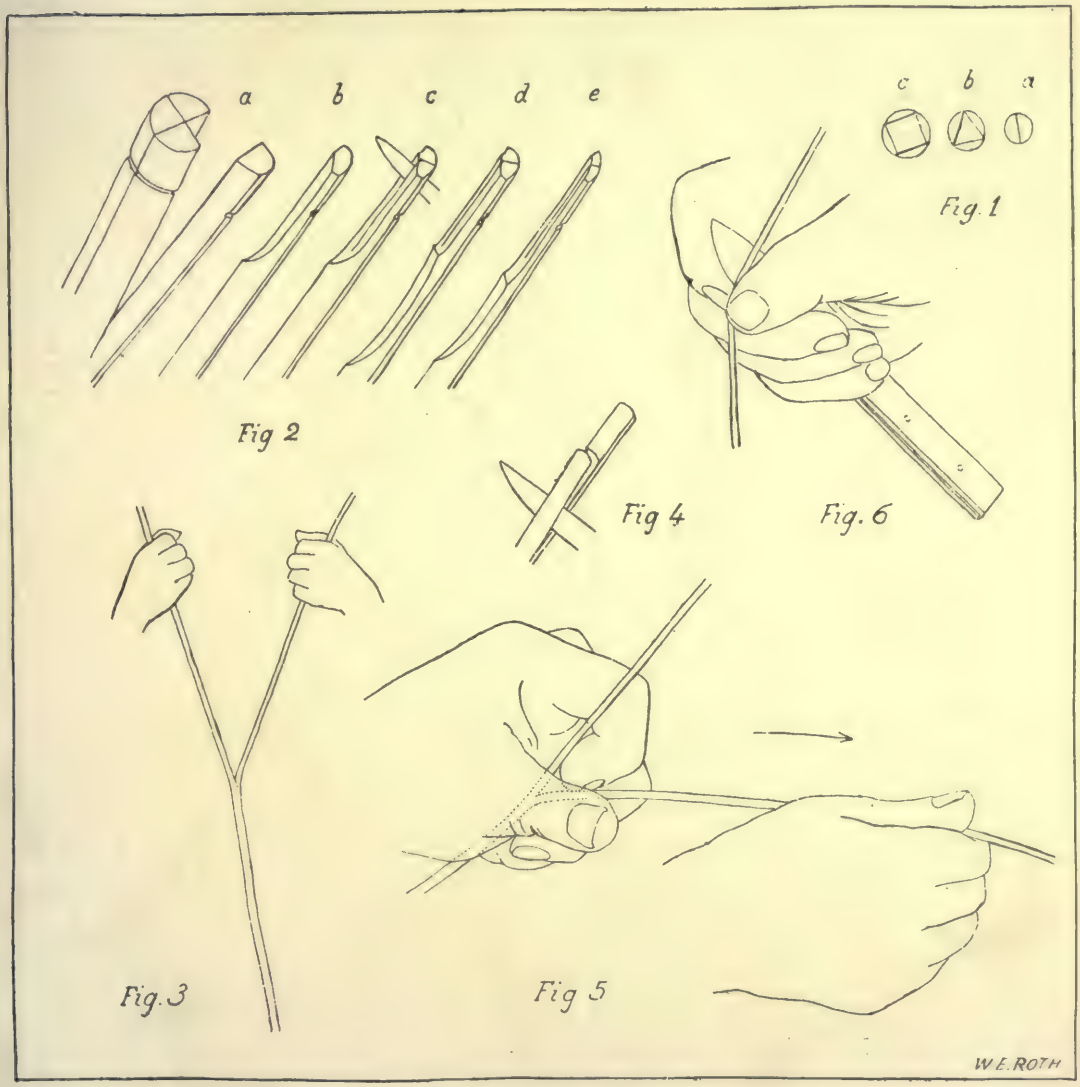
marodi sararaug (Fig. 2), and the *duburi kai-asanna* (Figs. 3, 4, 5), of which the respective English equivalents are fish-comb (*i.e.*, the saw-fish), *marodi* (penelope) bone (*i.e.*, the " wish-bone "), and sting-ray-gill; there are three variations in the third design.

(A.) *The " saw-fish " and " wish-bone " patterns.*

Foundation and superstructure.—So far as the technique is concerned, the saw-fish and wish-bone patterns only differ from one another in their foundation and superstructure, and hence may conveniently be described together. With the former fan the foundation is made by plaiting one set of nine strands more or less diagonally into another series of nine according to the arrangement illustrated (Plate VI, Fig. 2), where will be observed the small central spot of exposed strand which the Indians call the eye (*e*). The superstructure (Fig. 3) is formed by plaiting fifteen or sixteen additional strands into the upper edges of the " diamond," care being taken that, whatever be the number plaited along the one edge, a similar number must be worked on the other; absence of such provision renders the article askew and will ultimately prevent it fitting properly below. In the wish-bone variety, twelve strands are employed in the foundation (Fig. 4) while another eleven or twelve may be added on either side to form the superstructure (Fig. 5).

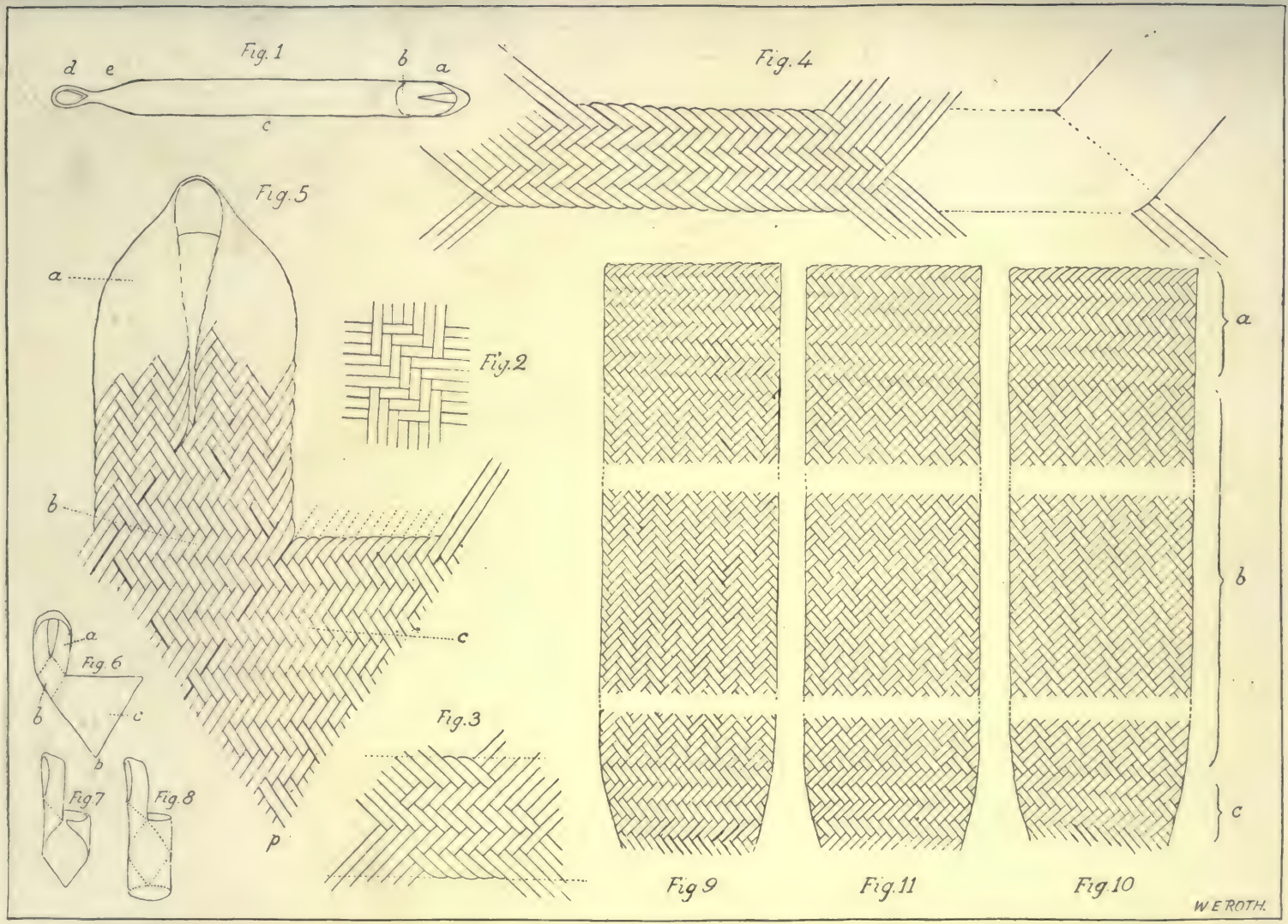
Gable.—On completion of the superstructure, the strands projecting from its upper lateral half are plaited into one another, to form the gable (Plate VI, Fig. 6), in such a manner that as each successive strand, starting from the apex of the superstructure, reaches the line which will ultimately limit the top edge of the blade, it is bent backwards, outwards, and downwards so as to underlie three or two (Fig. 7) others before rejoining the plait. Of course, when the bent strand underlies three others, the edge of the article will be much stronger than with only two, and hence the former arrangement is usually met in the fans employed for every-day Indian domestic work; on the other hand, in the specimens made for purposes of trade for Creoles and tourists, each bent strand may underlie but one other (Fig. 8). This bending and plaiting process proceeds until four strands remain at the top outer corner, that is to say, provided three strands have been underlapped at each bending; three or two must, however, remain if two or one respectively have been underlapped. The piece of plaiting being now reversed, the other gable is built in a similar manner, and with it the body of the blade is finished. It will be noticed (Plate VI, Fig. 6), that the strands projecting from the gable portions of the body's two sides are all formed of the tapering (distal) extremities (*k*), while those from the foundation and superstructure are composed of the (proximal) butt ends (*z*).

Wing.—Starting then on each side with the innermost of the four strands projecting from the upper corners of the body, these are bent, passed under the three remaining and plaited parallel with the side of the body (by means of the usual under- and over-lapping of three at a time) until they reach the lower angle



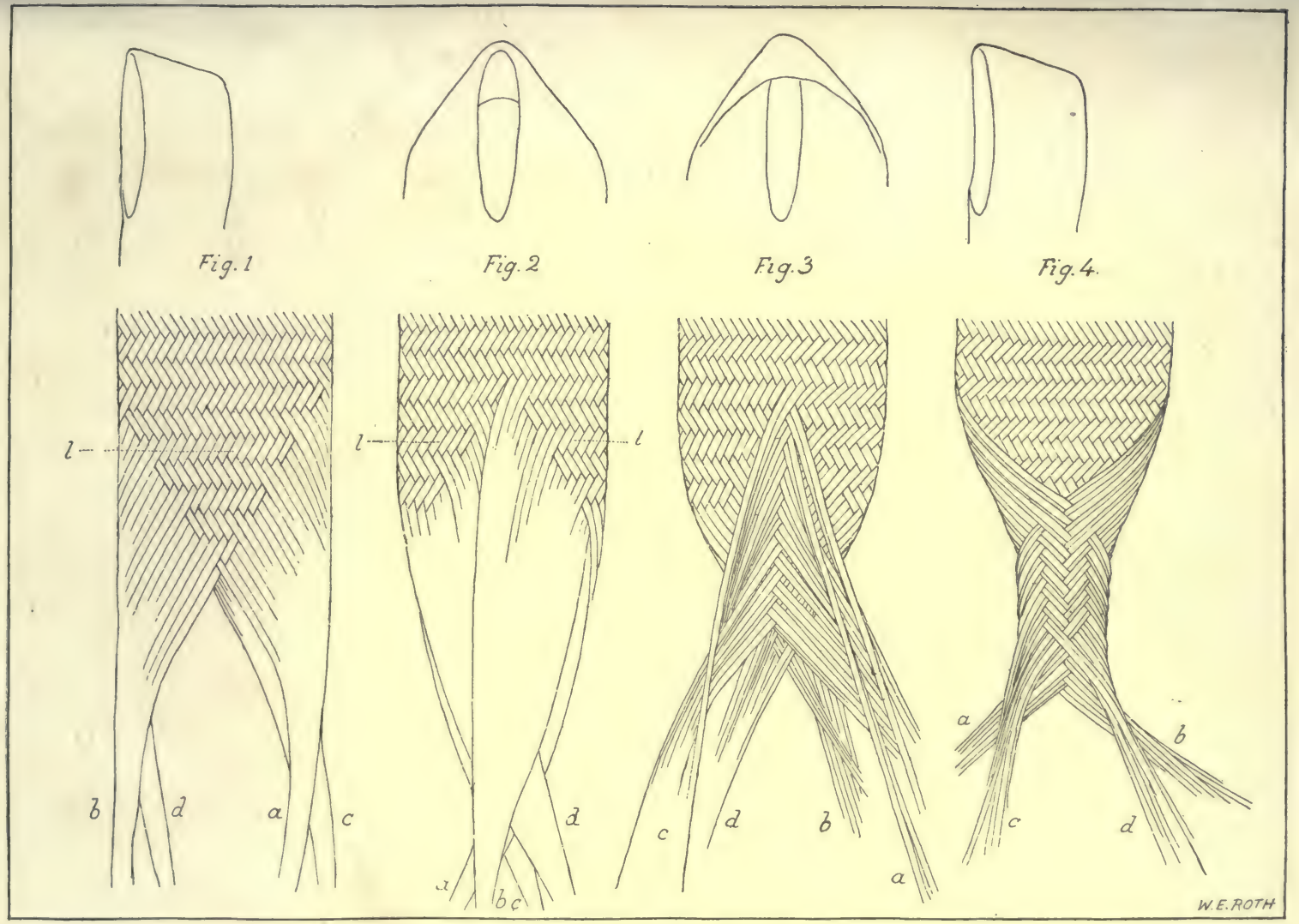
SPLITTING THE STRAND.

TECHNOLOGICAL NOTES FROM THE POMEROON DISTRICT.



THE CASSAVA-SQUEEZER.

Journal of the Royal Anthropological Institute, Vol. XXXIX, 1909, Plate II.



THE CASSAVA-SQUEEZER (*continued*).

Journal of the Royal Anthropological Institute, Vol. XXXIX, 1909, Plate III.

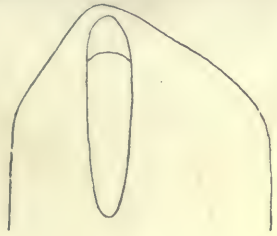


Fig. 1

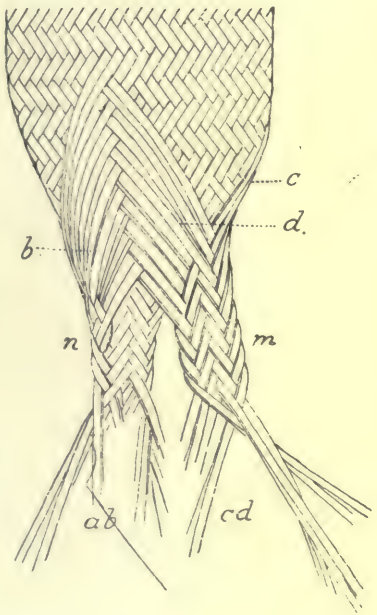
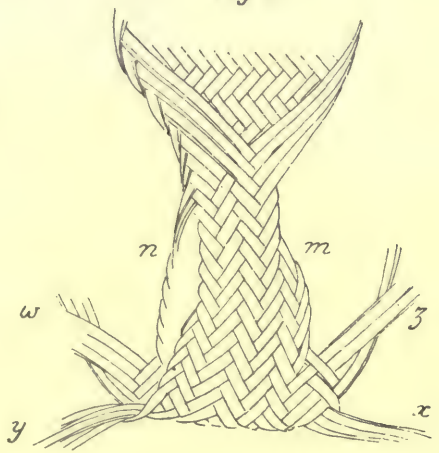


Fig. 2



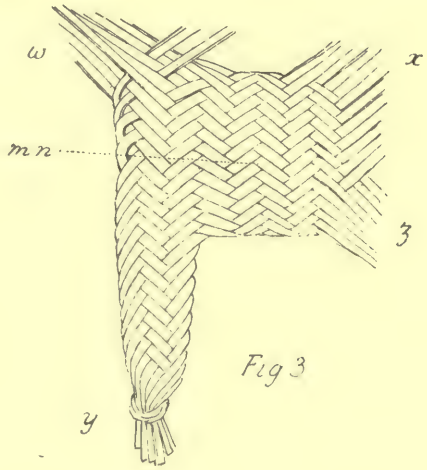


Fig 3

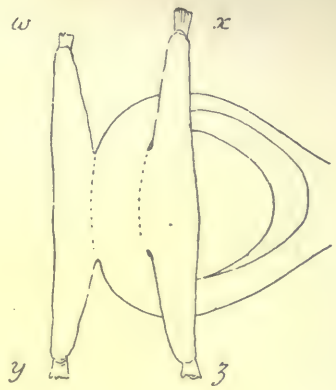


Fig. 4

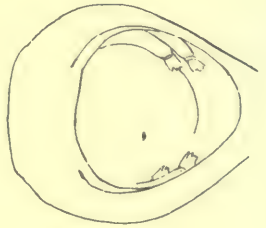


Fig. 5

W E ROTH.

THE CASSAVA-SQUEEZER (*continued*).

Journal of the Royal Anthropological Institute, Vol. XXXIX, 1909, Plate IV.



FIG. 1.



FIG. 2.

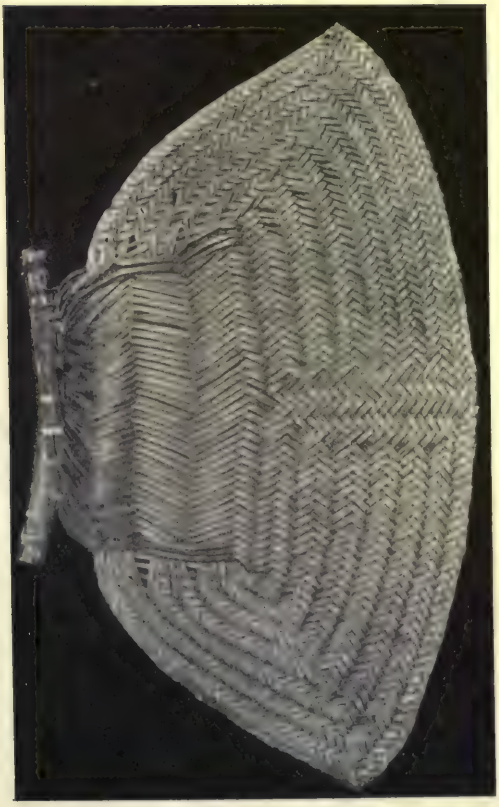


FIG. 3.

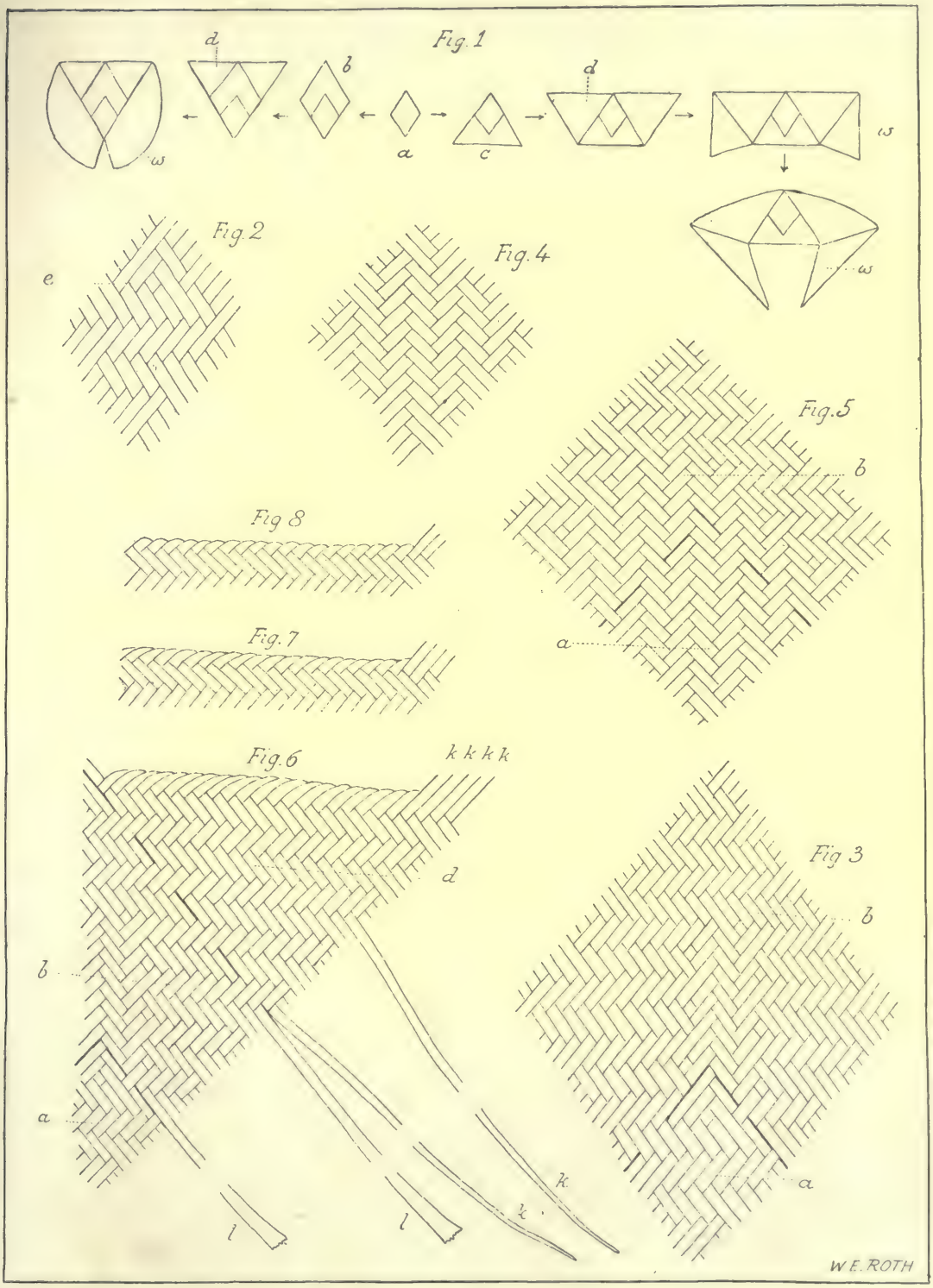
FIG. 5.



FIG. 4.

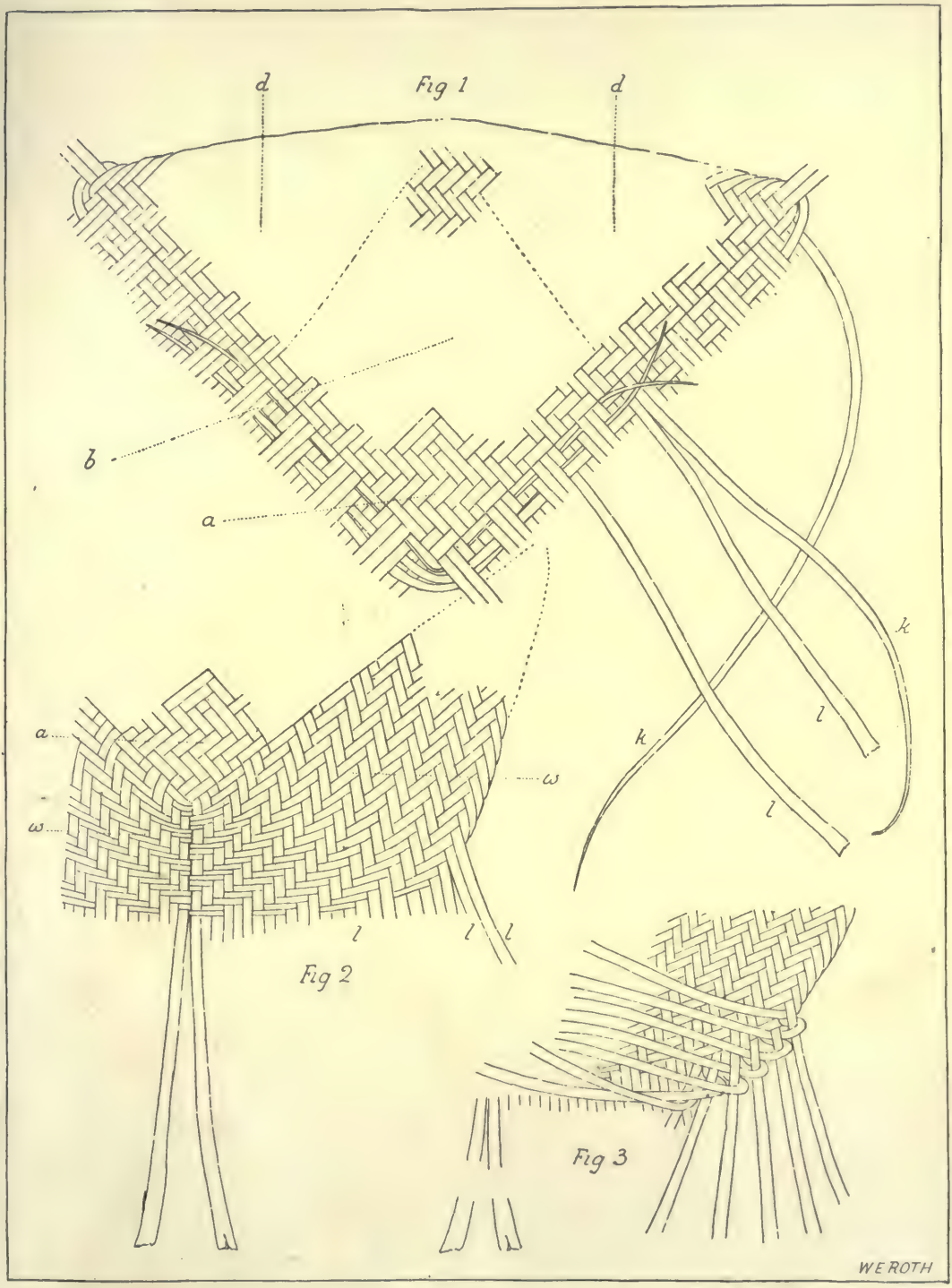
THE ARAWAK FAN.

TECHNOLOGICAL NOTES FROM THE POMEROON DISTRICT.



THE ARAWAK FAN (*continued*).

TECHNOLOGICAL NOTES FROM THE POMEROON DISTRICT.



THE ARAWAK FAN (*continued*).

TECHNOLOGICAL NOTES FROM THE POMEROON DISTRICT.

Journal of the Royal Anthropological Institute, Vol. XXXIX, 1909, *Plate VIII.*

Fig 1

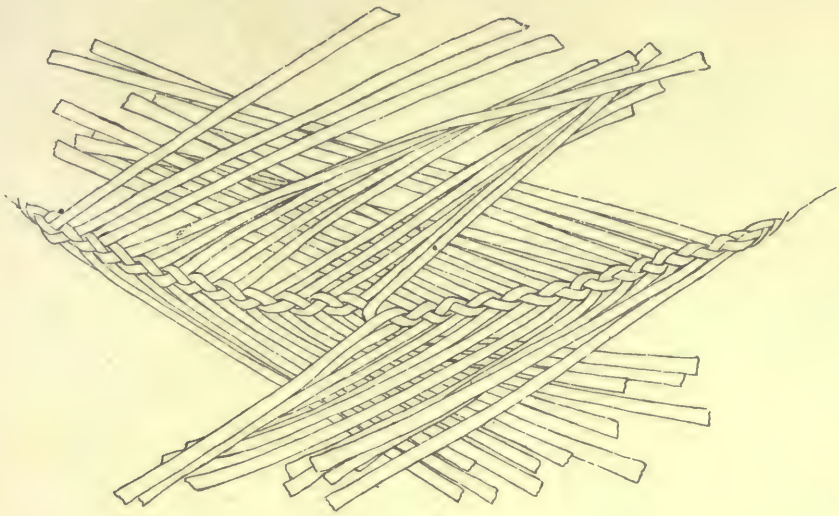
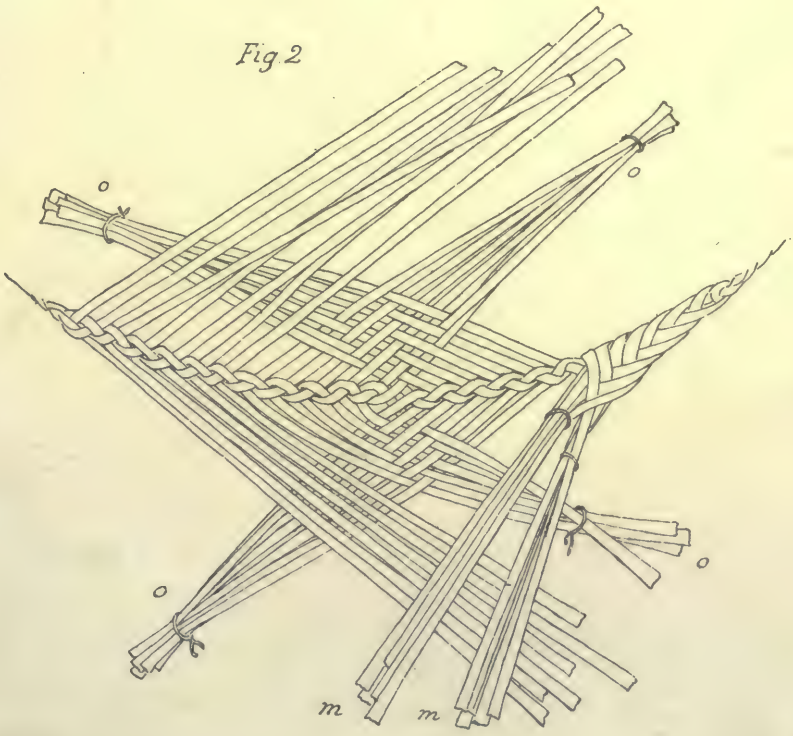


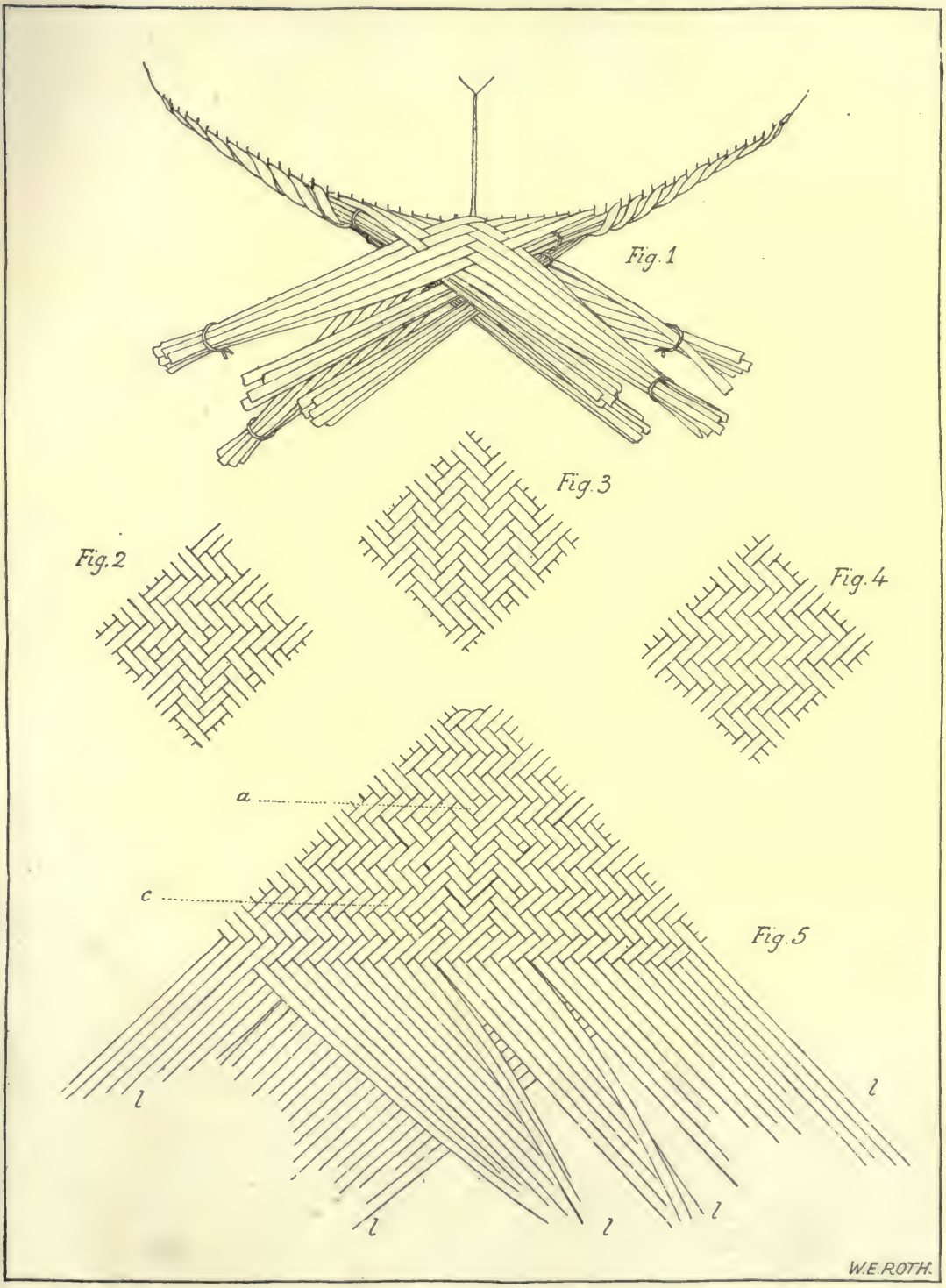
Fig 2



W.E ROTH

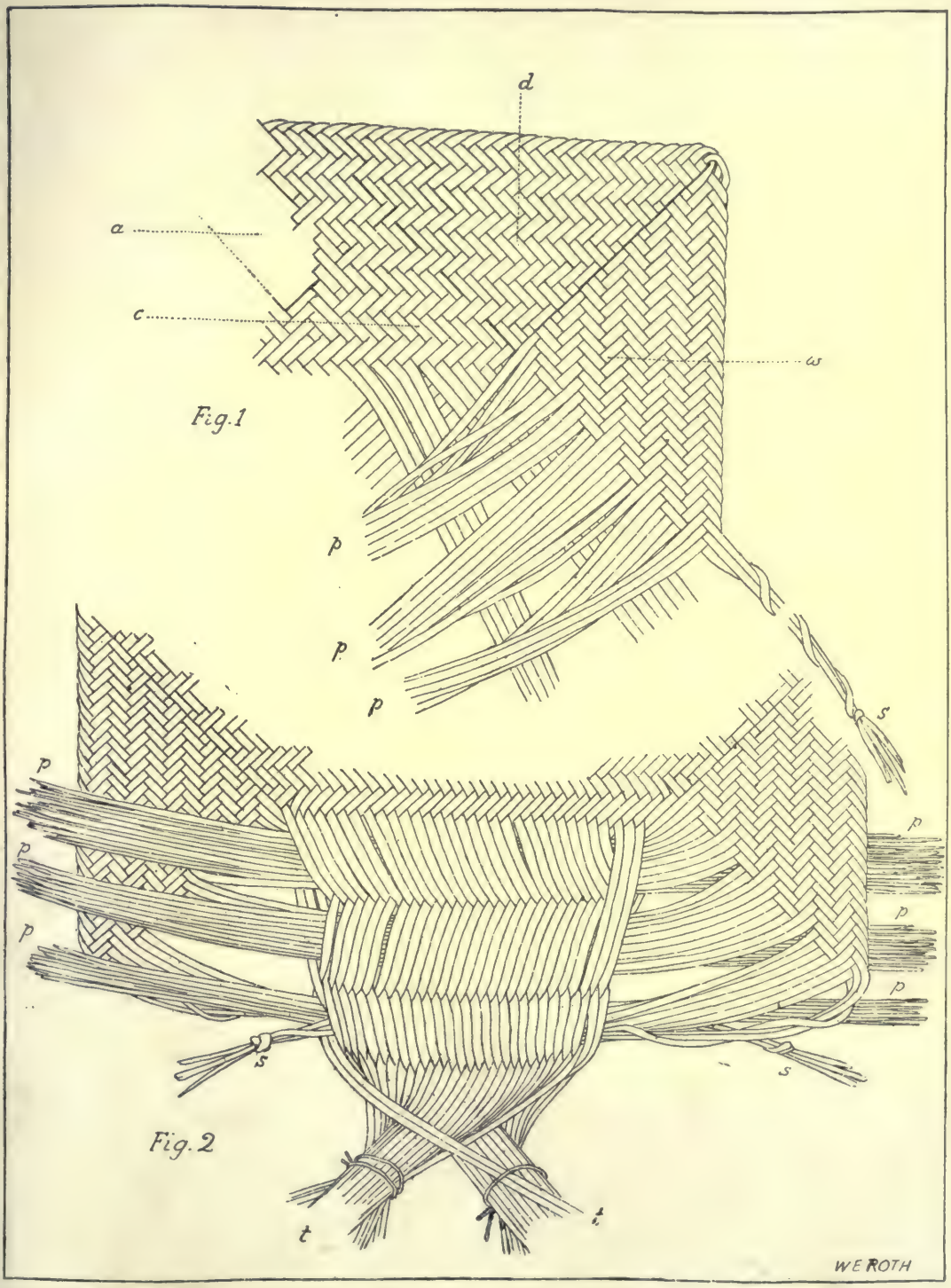
THE ARAWAK FAN (*continued*).

TECHNOLOGICAL NOTES FROM THE POMEROON DISTRICT.



THE ARAWAK FAN (*continued*).

TECHNOLOGICAL NOTES FROM THE POMEROON DISTRICT.



THE ARAWAK FAN (*continued*).

TECHNOLOGICAL NOTES FROM THE POMEROON DISTRICT.

of the foundation, between the two innermost butts where they cross (Plate VII, Fig. 1), the distal extremity of the one strand being finally tucked under and along the corresponding extremity of the other.[1]

The process is repeated with the next two corresponding strands, and so on until all the distal extremities of the strands projecting from the gable portions of the body's sides have been plaited, and tucked out of the way, to constitute the two wings (Fig. 2).

Handle.—The making of a handle out of the remaining proximal ends of the strands projecting below the blade is next proceeded with. Starting with the outermost, these are bent upwards successively and alternately one over the other (Plate VII, Fig. 3), until the innermost butt is reached, each newly bent strand thus helping to keep in position the one immediately behind; as a result, half the strands project more or less at an angle from the one surface of the blade and half from the other, thus constituting a set of two contiguous groups. After repeating the process with the butts projecting from the outer half of the blade, another set of two contiguous groups of strands is obtained (Plate VIII, Fig. 1). The outer components of each two contiguous groups are next bent upwards as before, successively and alternately one over the other, and their extremities tied into two bundles (Fig. 2 *mm*). The inner components, however, of the one set of two contiguous groups are plaited after the usual manner into the corresponding strands in the other set (*o*, *o*), this plait with its projecting strands ultimately forming the outer covering of the four bundles which have been tucked up underneath (Plate IX, Fig. 1). All these bundles are now lumped together and tied to constitute the handle.

In the saw-fish and wish-bone patterns of fan, a flat pencil of wood may be passed from below through the plait in between the innermost butts into the lower portion of the foundation (Plate V, Fig. 2); the Indians say that though this addition may increase the strength of the lower portion of the blade, it will tend to weaken it beyond.

(B.) *The "sting ray-gill" pattern.*

Foundation and substructure.—In the sting-ray fan, the foundation is made by plaiting thirteen strands into thirteen (Plate IX, Fig. 2), the pattern so produced being identical with a limited portion of the design introduced into the superstructure of the saw-fish and wish-bone varieties. This is the locally orthodox Arawak pattern, but what are described as more easily constructed variations (Figs. 3, 4) are manufactured; such completed articles are shown respectively in Plate V, Figs. 4 and 5. The substructure is obtained by adding a varying number of strands parallel with the lower edges of this diamond, an equal number on each side, and plaiting in such a manner (Fig. 5) that projecting below are two series of butt ends, the one series lying on the other.

[1] The size and method of construction of the fan are so adapted to the length of the leaf from which the strand is derived, that they just allow of this arrangement being made.

Gable : wing.—Gables (*d*) and wings (*w*) are next successively constructed (Plate X, Fig. 1) on the same lines as with the other fans, the only real difference being that the distal portions of the strands that have collectively formed the wings are not plaited into any of the butts but are left free to be roughly divided into three equal bundles (*p*, *p*, *p*). The three bundles from either side are then together tucked into and covered by the compartments formed by regularly crossing the upper and under series of butt-ends three times, the only exception to this regularity being with the three outermost strands on opposite surfaces of the blade, where the bundles commence to be hidden (Fig. 2). The next thing is carefully and successively to pull on the projecting extremities of the bundles and three outermost butts in the proper direction suitable for enabling the lower angle of each wing to be dragged more and more towards the centre.

Handle.—When this angle on each side reaches within cover of the butts, the latter are suitably arranged and tied to constitute a handle (*t*, *t*). The projecting extremities of the bundles (*p*, *p*, *p*) are finally cut off flush where they emerge from cover.

NOTES ON THE TRIBES IN THE NEIGHBOURHOOD OF FORT MANNING, NYASSALAND.[1]

By Captain C. H. Stigand, Royal West Kent Regiment.

Native Tribes.

The chief tribes in the neighbourhood are :—(*a*) Angoni, (*b*) Achewa, (*c*) Achipeta, (*d*) Achikunda, (*e*) Asenga; and more distant:—(*f*) Akunda, (*g*) Awemba, (*h*) Awisa, (*i*) Swahili, (*j*) Ayao, (*k*) Atonga.

There is one Swahili village, the chief being an ex-Askari,[2] and some Swahili among the Askari from the lake shore at Kota Kota.

Since the arrival of the Angoni and the consequent wars, the tribes have become rather mixed. The section of Angoni who settled here under Mpeseni have occupied chiefly Asenga and Achipeta country. For instance, Mponda, an Achewa chief, used to have his village under the west side of Mchenje, and held out in a fortified village against the Angoni for some time, but was finally worsted and had to run away. When things had quieted he built his village near the Rusa, about fifteen miles to the east of Mchenje.

Katungwe, another Chipeta chief, used to have his village near where the White Fathers now are.

A tree, in the gap between Chilembbwi and Kalulu Hills, is called Kuvakutira by the Angoni (from Kuvakuta—Bellows), as, when attacked, Katungwe at that place made the points of his arrows red hot with a native skin bellows before shooting them. He afterwards built his village twenty-five miles to the east.

When the Angoni began to beat everybody the Achipeta concentrated in several places, many joined Mwasi, the Achewa chief, at Kasungu to the north, whilst others collected near Dowa. When peace was restored the Achipeta who had been with Mwasi had got mixed with Achewa, and there are many who still don't know whether they were Achewa or Chipeta originally. The Angoni raided and made slaves in every direction, marrying the women captured, and keeping the men to help them fight. There are numbers of Asenga, Achewa, Achikunda and

[1] This paper deals specially with the neighbourhood of Fort Manning, British Central Africa, and more generally with the whole of British Central Africa, North-Eastern Rhodesia, and Portuguese East Africa. The language of the Angoni has been described as Zulu (Ngoni) for want of a better name. The language is evidently of Zulu origin (as are also the people) and possesses the two clicks *c* and *q* which none of the surrounding languages do.

[2] Native soldier.

Chipeta among the Angoni, who now call themselves Angoni, also a few Atambuka, but the latter are chiefly the slaves of the Mombera section of Angoni to the north. There are also Akunda among the Angoni.

Angoni.

This tribe lives chiefly to the west of the Fort, but there are a few villages to the south and west.

General characteristics.—A warlike tribe of Zulu origin, of great stamina and endurance, and of larger physique than the neighbouring tribes, who settled in this neighbourhood under Mpeseni (son of Zongandowa and brother of Mombera). Owing to intermarriage with and absorption by other tribes they are rapidly losing their physique and language. Since the death of Mpeseni they have had no big chief, and are now under a lot of small chiefs, each with but a few villages. They are honest, straightforward and obedient. An order has only to be conveyed to a chief, and what is required is invariably done. They are inclined to be lawless, however, with neighbouring tribes, looking on the Achipeta, especially, as their lawful property, to loot if occasion offers.

Although some of them are excellent trackers they do not seem to go in for hunting. All captured people and their offspring are admitted into the tribe and called Angoni, and now only the chiefs remain of pure Angoni blood, and only the old men can talk the language. On the death of a chief it is the custom for the son to succeed, unlike Ayao and Atonga. They do not make such good porters as the Ayao.

The head chiefs of the Angoni in the Protectorate are:—Mlanyeni, son of Mlanyeni, son of Mpeseni, name of household, Akwajiri; Kangwere, Akwankua; Nyoka, Akwatori; Mgubu, Akwantano; Zuru, Chimbilu, Msechi, Namawendi, Mphete, wife of old Mlanyeni. The latter is now in Mombera's country.

Achipeta.

This tribe lives chiefly to the east of the Fort. It is a race of poor physique, timid and unreliable. The chiefs have no real hold over the people, and hence the people are not accustomed to obey orders. They generally take the line of least resistance; they will readily assent to anything they are told and not do it. They hunt, or used to hunt, considerably, with dogs and guns, traps and game pits. Their villages are often stockaded to keep out lions. Like the Angoni, they cultivate very largely. They go in for rough iron smelting.

In a big war, they protect their villages with earthworks, and the remains of those used against the Angoni are to be seen in many places. Kabadala's village is a notable example, consisting of a group of earthwork-enclosed villages, with high walls of red clay, now considerably broken up.

The biggest chiefs of the neighbourhood are:—Kamwendo, Kiesa, Mzama, Kongoni, Kalulu, Kabadula, Kampanga; also:—Chimteka, Chimbwe, Nsawmbe.

Achewa.

This tribe lives to the north-east of the Fort, with an isolated detachment in the Mangazi valley, which was perhaps cut off when the Angoni wedged themselves in. They live chiefly in the neighbourhood of Kasungu (Fort Alston) where their chief Mwasi used to live. Now they are split up under lesser chiefs.

Formerly they possessed many rifles, and under Mwasi kept the Angoni off. Now they have practically no rifles.

The true Achewa, coming from Kasungu, appear to be of better physique than the Achipeta, and tall, strong men are often seen, but, as before stated, they are now so merged into the Achipeta that it is difficult, perhaps impossible, to tell where the one tribe begins and the other ends.

Many villages, calling themselves Achewa, are of more Achipeta-like aspect, and were probably Achipeta before joining Mwasi, when driven out by the Angoni, but have called themselves Achewa since.

In customs, habits, language, etc., they are very similar to the Achipeta, and so will not be described in detail.

The biggest chiefs are :—Mponda, Kapilama, British South Africa Co., south of Boma.

Achikunda.

This tribe lives to the south and south-west of the Fort, in Portuguese territory chiefly, with a few on the border. They are great hunters and have many rifles among them. They (or the part of them in the neighbourhood, for they are a very large tribe), have not been brought into contact with Europeans much, their country not being occupied by Portuguese officials in the manner that British territory is by British.

Occasionally the owner of the Prazo[1] may appear to beat up taxes or recruits for labour, but more generally his Askari or Kapitaos[2] do this. Their visits do not seem to be especially appreciated, as on the approach of a white man the villages are usually deserted, and the inhabitants cannot be induced to return till his departure.

They hunt[3] largely, elephant and buffalo with rifles, and smaller game with dogs, bows and traps. Every little village of a few huts seems to possess two or three rifles. The prevailing types are Tower muskets and flint locks. They buy these from the Portuguese, as also powder—*Onga*; in Swahili—*Baruti*. The bullets they make themselves out of iron or solder.

There is no native method of preparing powder. Flasks are made out of buffalo horns; the thick end is stopped up with wood (ebony). Powder flask—*Palavalenyo*. The tip of the horn is cut off to pour the powder through and closed with a bit of wood or cloth. It is worn in front of the waist.[4]

[1] Land or estate leased to Portuguese officials, which they virtually govern, lit. = lease.

[2] Native overseer or headman.

[3] See Hunting, in Report 20.2.06. *J.R.A.I.*, xxxvii, p. 127.

[4] Ruga-Ruga (north of Nyassa) wear theirs at the side.

They do not seem to have been worried particularly by the Angoni. During the Angoni wars they used to buy slaves from the Angoni with ivory, etc.

Awemba.

A very numerous and powerful tribe living towards Bangweolo and Lake Mweru. They hunt with spear, arrow, game-nets and traps, but do not appear to be in possession of rifles.

Awisa or Abisa.

These people live on Loangwa River, about Kambwire's Village, and towards Bangweolo. They hunt considerably and also fish to a great extent.

Their language is very similar to that of the Awemba as are also their habits; the latter tribe, however, are more of a river and water people. They will eat crocodile flesh which the Awemba will not.

Asenga.

This tribe seems to have suffered most from the coming of the Mpeseni section of Angoni, as the latter live chiefly in what used formerly to be Asenga country. There are many of them now living among the Angoni, having been made slave by them formerly; the present language of this section of Angoni is rapidly merging itself with that of the Asenga.

Atumbuka.

This can hardly be called an independent tribe now, having been merged into the Mombera section of Angoni. Their language, like that of the former tribe, is having a great influence on that of their former captors. The Angoni have freely intermarried with the women of conquered tribes, and the offspring naturally learn to a great extent when young the language of the mother.

Ayao and Atonga.

These tribes have been often described, so will not be discussed. They both furnish excellent soldiers, although the latter has never been a particularly warlike tribe.

Tribal Marks.

Tribal marks are made when a man wishes, generally after puberty has been attained, but no compulsion is used. A man sometimes has himself marked with the marks of another tribe in addition. That is to say, a man belonging to a slave tribe may have himself marked with the marks of a superior tribe and may often try to pass himself off as one of this tribe.

Achewa and Achipeta.—Long vertical gashes on face, shoulder and back. Women the same. Women wear Mpeti in centre of the lip like the Atonga.

Achewa and Achipeta call this Ntona. It is made sometimes of solder and sometimes of bone. In an old woman the hole is often large enough to reveal her teeth.

Angoni.—Have no tribal marks. Both men and women slit their ears, towards the bottom of the lobe, a slit being from about one-eighth to one inch long.

Akunda.—Two vertical gashes on forehead.

Asenga.— # on forehead, temple and stomach.

Ayao.—Two perpendicular gashes from behind the eye downwards, on either side of the head. Women wear Chipini (a large stud made of solder, sometimes of bone when solder cannot be procured), in left side of nostril like Swahili women. Yao women have no tribal marks, but are generally covered with gashes on legs, stomach and buttocks.

Atonga.—Four gashes on either side of the head, behind the eye, in the form of a cross + Women wear Mpeti in centre of lip.

Awemba.—Blue line down centre of forehead.

Atumbuka.—Three lumps like warts on the centre of the forehead, and vertically above one another and the nose.

Value of different Tribes as Soldiers.

The different tribes may be divided into three different divisions.

(1) Dominant tribes, who have expanded at the expense of other tribes.
(2) Tribes who have not in the past shown any strong warlike tendency, but have managed to hold their own.
(3) Slave tribes.

In the first division we might place the—Ayao, Angoni, Awemba, and perhaps Swahili.

The Ayao are essentially the best fighting men to be had in Central Africa, and perhaps the best to be had in the whole continent. Strong, hard, obedient and amenable to discipline, brave and cheerful, they will never desert their officers in danger and suffer from no caste prejudices, religious scruples or waves of fanaticism, which make so many native troops difficult to deal with. Many of them profess Mohammedanism, it is true, but they do not worry themselves with many of its observances.

The Angoni and Awemba should prove themselves good fighting men, coming as they do from a warlike and disciplined stock, but the former, as we have stated, are fast degenerating from intermarriage and should be carefully picked.

Angoni, originally strong, have broken themselves up into sections as they have accumulated wives and slaves, and in these sections almost every household has with its captives and other people (enticed to bring up the fighting strength) founded a village of its own, so only the chief of the village is of anything like pure stock, and most of the remainder who call themselves Angoni have no pretensions whatever to Angoni blood. This was strikingly exemplified when enlisting an

Angoni Coy., in 1904–5, from among the Mpeseni section. On calling for recruits, about one hundred so-called Angoni presented themselves, of whom I rejected about seventy-five as worthless, and on writing down the remainder found that they were all the sons of local chiefs or their Indunas.

The Swahili have not been found successful. They have probably gained their present position (coming from Zanzibar) by their skill in trading and the superiority of their firearms.

To the second division we might assign:—Atonga, Alolo, Awisa, Achikunda, Achewa, and perhaps Akunda.

The Atonga, although not of a warlike tribe, as soldiers can be ranked only second to the Ayao.

The Alolo have proved themselves fairish soldiers.

A few carefully picked Achewa and Akunda have proved themselves excellent men, but they must be very carefully chosen, and these tribes would not afford any bulk of suitable men.

I do not know of what the Awisa and Achikunda are capable, but, judging from appearances, the former tribe appears to hold some good men.

In the last division, viz., slave tribes, we might place the—Achipeta, Atambuka, Asenga, and perhaps Manganja.

Among the Manganja a good man is occasionally found, but the three remaining tribes may be dismissed as worthless.

CUSTOMS OF WAR.

The Achipeta largely use bows (*Uta*, pl. *Mauta*) and arrows (*Mubvi*, pl. *Mibvi*). The arrows are poisoned in various ways. They are made with a point of rough smelted soft iron inserted into a shaft of reed (*Bango*), and bound on with string. The notch to take the bow string is also bound, to prevent the reed splitting. They do not feather their arrows, but the Achikunda use vultures' feathers for this purpose. The bow is made of a tree called *Tenza*, is about 5 feet long, nearly straight in the middle, and curving at the tips.

The string (*Nsinga*) is made from prepared tendons to be found on either side of the spine of the Kudu (males only), eland (females only) and hartebeest (male and female). The method of stringing the bow is curious. There is a hole bored at either end through the wood, through which the tendon or string is passed, and then, after being wrapped some twenty times round the bow, is made fast on itself.

To tighten the bow one end is placed on the ground, and the weight of the body brought to bear on the other end. This bringing the two ends nearer each other slackens the string, which is taken up through the hole and the slack disposed of by twisting all the turns round and round till the slack is taken up. The end is then released and the bow is taut.

Arrow Poison.

The preparation of arrow poison is not generally known, the secret being confined to a very few. Thus among the many villages between Fort Manning and the Bua where the road crosses it, there is only one man known to be able to make it. Those who are skilled in these things are not ready to divulge their knowledge, and the old men are always afraid of the young men making improper use of such knowledge.

Arrow Poison.—Chaola, as distinguished from other kinds of poison.

Achipeta Tribe.—Methods of preparation.

(1) Roots are obtained of :—

(*a*) A plant called Chula-Nyunga.
(*b*) „ „ Chuuyu Ndazi.
(*c*) „ „ Ka-Udzu.

(The two foremost have roots the shape of potatoes, the latter, signifying "little grass," is a flower.)

(*d*) The fruit of Ntula.

The nostrils are closed by stuffing up a small piece of cloth or calico while digging the roots up and during preparation. The three roots are then taken to a spot some way from the village, and are chopped up fine while the Ntula is sliced; the whole is then put in an earthenware pot and water poured in to just cover it. If a snake called *Kalikwikwiti* can now be obtained it is put in whole, otherwise it is omitted.

A hole is made in the ground to rest the pot in, and it is covered over and left. It is examined from time to time, and if it has dried up, more water is added. It is kept like this till it is required for use. If the village is threatened with war, the pot is brought in and placed ready for use in the place to be defended. Before firing, their arrows are dipped in it.

If they are going out to fight all the arrows are dipped in, taken out, and the poison allowed to dry on them, before they are inserted *point downwards* in the hide quiver.

(2) An animal poison made of the gall bladder of the crocodile and certain parts of toads and snakes, mixed in a pot and kept ready for use as above.

A quiver (*Podo*) is made of rough hide and the arrows placed in it point downwards. It is hung on the back with two strings, the top behind the right shoulder. The arrows are taken from behind the shoulder as required.

As is generally the case, the natives do not seem to practise shooting with bows or spear-throwing of their own accord. Spears and arrowheads are made of soft rough smelted iron.

The Achipeta used to fortify their villages by building thick mud walls round them, and by planting in front of this a maze of Mkadze (a kind of euphorbia tree), through which the path wound. In the centre of the village would generally be a well. The earthworks are banked up on the inside—sloping to the rear—presumably

for drainage. They were made by hand only, the wet clay being trodden in a hole, and then slapped on and allowed to bake in the sun. I have not been able to discover or hear of any case in which pits have been dug in the pathways or entrances to the village, although it is a common practice to dig them for game. Loopholes about 1 foot by 3 inches, through which to shoot arrows, are made. Outside the walls is a ditch, and over this an impromptu drawbridge, made of long poles.

The defenders await the attackers, crouching in the Mkadze hedge, from which cover they shoot their arrows and then retire to the work, clambering across the bridge of poles, and pulling them in after them.

Examples of earthworks are Kabadula's Village, Mabwera's Village, and many others.

The Angoni use neither firearms nor bows, although men captured by them from other tribes might be seen with bows.

Their weapons are a bundle of spears (*Mkondo*, pl. *Mikondo*), carried in the left hand behind the shield (*Chishkhliango*), and a knobkerry (*Nthonga*) generally carried in the right hand. The spears are used for either throwing or stabbing, and are taken from the left hand as required. A dart called *Ruti* is often carried also, being an iron head attached to a short stick, feathered with hair and strips of calico, in all about 2½ feet long.

The shields are made of bullock hide, about 4 feet long and 2 feet broad. At the back is fastened a stick, about 5 feet long, surmounted with the tail of a spotted cennet (*Simba*) bound round it. The centre of the shield is strengthened with two strips of goat hide, passing from top to bottom through slits in the hide. At the back in the centre is a leather loop to hold with the fingers of the left hand. Arrows will not penetrate. The knobkerry is from 2½ feet to 3 feet long.

War Dress.

Feathers in the head. Simba skins over the chest with an arrangement of long goat hairs over it—*Machoa*. A goat-skin hung from the waist in front. Simba skins on either side and a monkey's skin behind. Ear-rings of solder (*Mtovu*). Men who have been conspicuous for bravery wear horn charms on the chest.

War Dance—Mgubu.

A dance is held before going to war. A message is sent round to all the villages to call men to war. At the dance an ox is generally killed, after which beer is drunk, and the warriors set out. Scouts proceed in front of them and bring back news to the column behind. If they are few and their enemies many, they creep up to surprise their enemies, but if they are many they make their attack in daylight and make no attempt at concealment.

On attacking a village or fortified place, it is everyone's desire to "break the *boma*," *i.e.*, to be the first man inside the stronghold. It used to be a common

practice with them to attack at dawn or "first cockcrow." That with spears only they were constantly attacking and often beating tribes armed with Tower muskets, flint locks and poisoned arrows, testifies to their courage. The spears must have been chiefly used for thrusting, as their throwing with spears is painfully weak and inaccurate. At 20 yards they are unable to hit a man with certainty, and at 50 they will not be able to reach him.

On return from the war a meeting is held and a bull brought into the midst. The men that broke the *Boma* then stab it in the neck with their spears, the man who was first in the *Boma*, first, then the second, and so on till it falls down dead.

Currency.

Axes and hoes are sometimes used as money.

Their values are:—

Large hoes (*Khasu*),	4	yards	calico	or	1*s.*
Small „ „	2	„	„	„	6*d.*
Axes (*Nkwangwa*),	2	„	„	„	6*d.*

There are no native markets for the exchange of provisions, etc., as on the West Coast.

DENEHOLES AND OTHER CHALK EXCAVATIONS: THEIR ORIGIN AND USES.

By The Rev. J. W. Hayes.

[With Plate XI.]

Owing to much patient research on the part of several antiquaries in the Home Counties, and, in consequence, the accumulation of a considerable mass of new evidence in connection with this subject, or at least evidence not exactly available to the writers of twenty years ago, it appears to me, that many of the opinions, formerly held, about the origin and use of deneholes, must be relinquished, and the whole discussion thereon put upon a safer basis. Nothing seems to have contributed more to the elucidation of the truth in all such matters, again, than the happy interchange of ideas, made possible by the regular publication of the "Transactions" and "Proceedings" of the different archæological and scientific societies within the United Kingdom, which can now be exchanged one with the other, thus bringing individual discoveries under the notice of all. The crowning feature of our time being the formation of such bodies as the "Congress of Scientific Associations," and "Union of Archæological Associations," together with the annual publication of an "index" containing the names of the principal writers during the year, and the titles of their papers on various subjects of interest. Then again, there is a growing tendency for the members of one association to visit those of another, and interchange lectures, so that antiquaries of neighbouring counties may be made familiar with each other's labours, thus—by the comparative study of any one branch—much additional evidence is obtained, and a broader view taken.

Now, in direct connection with the matter of this paper, a great deal has been written, and the number of conflicting opinions expressed is positively amusing, no less than *ten* theories as to the origin of deneholes struggling for recognition. Whereas the evidence now available points—as I hope to show—in one direction exclusively, namely, that they never had a higher claim than that of "chalk pits," "chalk wells," or "chalk quarries," the name "denehole" being a comparatively modern and misleading title. I say "comparatively modern" because, as far as I am aware, this name was unknown in the sixteenth century; and "misleading" because it gave the idea that the pits were somehow connected with one of the many Danish invasions. In other words, that these pits were used by the ancient Britons to hide, either themselves or their corn, from the Danes. But the etymology of the word "dene," as applied to them by modern writers, points to its derivation from an Anglo-Saxon word signifying a depression, cave, den, or hole. If it be

objected to this, that it is not likely two words for the same idea would be thus used in conjunction, Mr. W. H. Steadman points out the similar cases of River Avon and River Ouse, both words "Avon" and "Ouse" meaning river or "running water." This line of reasoning, I think, ought to satisfy, as to the double name. Of course there is no limit to the imagination, nor to the innate tendency of some to build castles in the air, or deliberately to manufacture myths; and this tendency is forcibly brought to my mind by the remark of one of the guides to the series of pits at "Hangman's Wood" (near Grays) who was overheard telling a party of visitors, that a certain square hole in one of the chambers was "the place where the ancient Danes baptized their children"; the fact being that the square hole was sunk by a young gentleman from Grays, well known to me, for the purpose of finding the original floor of the chamber, and this only the year before the guide's visit.

Later on I hope to give a few more instances of how well-intentioned persons may be utterly deceived by a false deduction, from such like myths. The most reliable papers on the subject before us recently published, are those by Mr. C. W. Dawson in the *Geological Magazine* for July, 1898 (viz., "Ancient and Modern Deneholes"), by Mr. T. V. Holmes in the *Geological Magazine* for October, 1898 (viz., "Deneholes and Bell Pits"), by Messrs. T. E. and R. H. Forster, in the *Journal of the British Archæological Association* for August, 1904 (viz., "The Chislehurst Caves"), by Mr. J. G. Neilson Clift in the *Journal of the British Archæological Association* for June, 1908 (viz., "Criticism of the Hangman's Wood Denehole Report"), also in the September number, and by Mr. Francis W. Reader, in the *County Memorials* for October, 1908 (on "Deneholes"). The names of other valued contributors to the literature of the subject will be found in the Appendix or alluded to during the course of the paper.

Perhaps the earliest notice we have of an artificially excavated pit or cave, used for any purpose, is that of the pit in which Joseph was placed, *i.e.*, a pit for the purpose of temporary detention. This was doubtless one of those used for concealed stores of corn, or for the purpose of hiding in time of tribal war. Of the latter we have an instance in 1 Samuel xiii, 6, where the Israelites being hunted by the Philistines "did hide themselves in caves and in thickets and in rocks and in high places and in pits." Of the former we have an example in Jeremiah xli, 7, where Ishmael the son of Nethaniah was accosted by some fugitives who tried to save their lives by revealing certain farm treasure-pits where fruits of the harvest were stored. "Slay us not," said they, "for we have treasures in the field of wheat and barley and of oil and of honey." This referred to a well-known custom in the East of concealing the fruits of the earth in the ground or in natural caves. The same custom was pointed out to Julius Cæsar many centuries afterwards as obtaining amongst the old Germanic and even British peoples, which knowledge he was quick to utilise in securing corn for his armies by emptying these treasure chambers whenever discovered. We have also the examples of the hiding of a hundred prophets by fifty in a cave during Ahab's reign, and the hiding of David and his outlaws in the limestone caves of Adullam.

In Jeremiah xli, 9, we read that even a king sought refuge in such like places—"Now the pit wherein Ishmael had cast all the dead bodies of the men whom he had slain because of Gedaliah was that which Asa the king had made for fear of Baasha, King of Israel." Not to weary one with the enumeration of other instances of the use of refuge pits during the Maccabean period, and the later, Herodian, period of Scripture history, I pass on to some evidence from Classical History. Diodorus Siculus about 44 B.C. writes of our British ancestors: "They say that its original tribes inhabit Britain, in their usages keeping the old ways of life; for in their wars they use chariots, and they have mean habitations constructed for the most part of reeds or of wood, and they gather in the harvest by cutting off the ears of corn and storing them in subterranean depositories."

It is this passage which has led several writers into mistaking silos and grain pits for deneholes, but, as a general rule, silo pits and granaries differ altogether, in shape and size, as well as in material from the pits now under consideration, and, unlike deneholes, were excavated, not for the purpose of their contents, but as receptacles and storehouses. Tacitus (in *De Moribus Germaniæ, c.* 16) says that the Germans were accustomed to dig subterranean caverns, and then to cover them over with much loose earth (compost), forming thereby a refuge from storm and a receptacle for corn, because by means of such sort of places they resist the frost; and besides, if at any time an enemy came, the open country is plundered; but these concealed and deep sunk dens are either unknown or deceive the plunderers, even by the very circumstance that they are places to be hunted after."

King (in his great work *Monumenta Antiqua*, p. 44 and onwards) mentions the evidence of Hertius (in *De Bello Africano*, sec. 57) touching corn pits in Barbary; also that of Dr. Shaw (in *Shaw's Travels*, p. 139), of Dr. Russell (in reference to Aleppo), of Harmer (in his *Observations*, vol. 2 and 3) and of Tavernier (in his *Voyages*, tom. i, p. 198), where he notes the same custom in Syria and Persia. Again, the traveller Chardin (in tom. i, p. 38, ed. 1711) says that in Mingrelia near Media "he has seen pits of this kind which have served from generation to generation, without any damp or moisture having penetrated them, and without being subject to any bad smell." Lastly, Pennant (in his *Voyage to the Hebrides*) bears this testimony: "In various parts of this neighbourhood are scattered small holes formed in the ground, large enough to hold a single man in a sitting posture. The top is covered with a broad stone and that with earth. In these the unhappy fugitives took shelter after a defeat, and drawing together sods formed a temporary concealment from enemies." A most excellent paper on the use of such granaries (which might on emergencies serve for hiding places) is that of Mr. C. J. Spurrell in the appendix to the *Report of the Denehole Exploration of Hangman's Wood* (by Messrs. T. V. Holmes and W. Cole in 1887). It is entitled "Ensilage or preserving grain in pits." Knowing how damp our own climate is, and how porous chalk proves itself, many have thought that it would be impossible to store corn in a chalk pit, or one excavated in hard earth, but such is not the case. Mr. Spurrell tells us that "Bread has been made on several occasions from corn

buried more than a hundred years." The process of storing is well worth noting, as it will then be seen how it preserves its sweetness notwithstanding the damp. "When corn is buried in the rock, a short or a long time, the exterior of the heap becomes more or less damp, and this either causes actual abortive germination or mere preliminary fermentation. The result is the formation of a *croûte* or cake, varying in thickness and of great density. Its hardness is so great as to prevent—after a certain thickness has been attained—the further access of humidity and oxygen to the mass, and even to permit a man to walk on it without breaking through. The corn, within, is practically self-sealed." When, however, the buried grain is required for use, it must all be taken out at once or it rapidly decomposes. Varro maintains that "those who keep their corn underground in pits take the corn out some time after they are opened, as getting into them is attended with danger when they are first opened from the confined air in them." If in the case of clay or chalk pits, good masonry or cement was used in the lining, the danger from damp would be minimised. Such underground granaries, however, indicate a rude state of civilisation and consequently the storage of but limited quantities of grain belonging to small farmers or peasants. Therefore, if we had no other argument than that of the huge size of the chambers, of the Abbey Wood or Hangman's Wood deneholes, it tells against their use in this manner; for one or two of the largest of them could easily store all the corn of a shire, but there are other weighty reasons against the storage idea. The grain pits of Morocco, Italy, Austria, Hungary, Germany, and Poland are not nearly so large, deep and inconvenient for storage as our deneholes; some are conical, others bottle-shaped, some square; some again have compartments underneath each other.

In Brittany pits have been discovered with short vertical shafts and joined together by tunnels, while Mr. Francis W. Reader informs me that the Dorset silo pits bear no similarity to the Essex deneholes, but are more like cisterns, varying in size from 2 feet 6 inches by 4 feet to 13 feet by 6 feet, and "not far under the surface of the ground." Moreover, grain pits have smooth sides, either levelled off with a tool, plastered, or, if of clay, beaten hard with a mallet to render the sides impervious to wet. Then, in these shallow grain pits is found, frequently, the charred remains of corn refuse, or blackened *débris* of vegetable matter, as we might naturally expect, but no pick mark holes or rough edges such as we find in true deneholes. Curiously enough, in some of the Dorset pits were found the remains of human skeletons, not accidentally thrown in, but as if the old silo pits had been put to a secondary use as graves. This is not the case with our true denehole, which, really, would be a most inconvenient place for sepulchral purposes. But some may say, "Have not the bones of the *bos longifrons*, red deer, as well as Roman pottery, broken burial vases, amulets, grinding stones, bone combs, spindle whorls and weights been found in them?" My answer is, yes, in the rubbish heaps at the bottom of some of the older ones these things have been picked up, and in one, situated on an estate near Swanley, Kent, I, myself, found a hound's

skull, an old iron fire grate, broken plates, tin kettles, and a sardine box; but what do such "finds" prove? Simply that the shaft was a convenient place to throw down anything that was broken or valueless, and as some of the older shafts must have been open in Roman times—"deneholes being of all ages," as Dr. Laver observes, from the time of the ancient Britons to the present day—what was to prevent the occupants of a Roman villa close to a denehole from using it as a dust-bin? Mr. R. H. Norris (son to the late Mr. Daniel Norris, of the Brickyards, Hemel Hempstead), whose additional evidence I shall refer to presently,[1] in a letter to me, says, "We had one old shaft which had been used as a receptacle for all sorts of things. It holds a fine assortment of cats, dogs, a fox, broken crockery, garden pottery, waste clay, etc. Could some of the 'fancy theory men,'" he continues, "get a section of it, goodness knows what romance they could not weave." My opinion is, that if sepulchral utensils or skeletons have been found in chalk pits, they were shallow ones of a different shape from the typical denehole, unless they were thrown down the shaft of the latter to get them out of the way. I know that the late Mr. R. Meeson, who lived not far from Grays, reported to the *Archæological Journal* (vol. xxvi, p. 191), and wrote to the author of *Stifford and its Neighbourhood* (Rev. W. Palin), that he found in a chalk cavity a lot of Roman burial vases, "which had been crushed by the fall of the roof," but I have reason to know, also, that he did not consider true deneholes as sepulchral chambers but as primitive chalk quarries, dozens of which are found all over the parishes of Stifford and West Thurrock, in which neighbourhood he spent his days. See *Stifford* (by Palin), p. 41: "I have never seen in them evidence of occupation as dwellings or stores."

In Mr. T. V. Holmes's paper[2] on *Deneholes and Bell Pits*, the talented author seems to be very adverse to the idea that these pits were excavated for chalk alone. "If," he says, "any people at any period deliberately concentrated their pits where they got the least return for their labour, and where there was no counter-balancing advantage whatever—as they must have done at Hangman's Wood and Bexley on the chalk pit hypothesis—the inference necessarily follows that the makers of the pits were lunatics." These are hard words to apply to the excavators on such flimsy evidence, but they are but a re-echo of Mr. Spurrell's opinion, "If the primary wish of the Hangman's Wood excavators was to obtain chalk, they knowingly and wilfully concentrated their efforts of every kind so as to ensure the worst and least possible return for their labour—a thing which no people, ancient or modern, ever did or will do." Furthermore, that any one holding such an absurdity displays, indeed, a knowledge of modern chalk wells, but alas! "coupled with ignorance of the nature of ancient deneholes" (p. 249 of the *Report*).

Mr. Miller Christy, of the "Essex Field Club," in an interesting article, viz., *The Deneholes* (from the *Reliquary* of April, 1895), writes in the same strain, viz. "the most frequent, though at the same the most easily refuted, theory advanced

[1] See Appendix "*c*."

[2] See also Appendix "*u*."

is, that deneholes are merely ancient chalk pits. No one practically acquainted with the question could possibly entertain this view. It can hardly be conceived that any community, if wanting chalk, would have dug down through nearly 60 feet of super-imposed strata to obtain it, when an unlimited supply could be obtained actually at the surface within one mile. To suppose any race of people capable of such absurdity is to discredit their sanity." Now, both these writers are esteemed friends of mine, as are several other antiquaries whose theories I cannot agree with; but at the risk of being considered "absurd" and "insane," I hold, that the men who chose Hangman's Wood, Abbey Wood, Bexley, Swanscombe and Purfleet Hill knew very well what they were about, and went the right way to obtain, in a pure, dense condition, what they wanted, viz., good block chalk, and this could best be obtained under great masses of sand such as we find in those places.[1] The fact being that chalk near the surface—just like coal—is impure, full of clay washed down with the rain through the tiny fractures, friable, and utterly unfit either for building blocks or for lime burning.

I feel somewhat like Mr. W. T. Vincent, the learned President of the Woolwich Antiquarian Society, did when he wrote in 1897, "It is worthy of note that the advocates of the romantic school who favour the 'habitation' and 'refuge' and such like theories all unite to load, with their heaviest scorn, the conjecture that these deneholes were made for the simple purpose of getting chalk, as there is usually some place within a mile or so in which chalk may be had almost on the surface; therefore, they say, if people dug these deep pits for chalk they must have been 'idiots'" (*History and Mystery of Deneholes*, p. 34).

To solve the problem satisfactorily we must know the various qualities of chalk (for the deposits differ much), and the various uses to which it was put, both in ancient and modern times; then, we can more readily perceive why the workmen chose to sink their pits just where they did. Chalk, we learn, was used for (1) building blocks[2] (in churches, castles and private houses, each block being about the size of four bricks and quite durable for centuries if plastered outside), (2)[3] tiles, (3) bricks, (4)[4] glass-making, (5) cement, (6) lime, (7) paint, (8) whiting, (9) road making, (10)[5] filling in foundations and walls, (11) repairing bridges and sea embankments, etc., but, in great quantities, as a (12)[6] manure upon heavy lands. The evidence for this I have gathered from no less than thirteen or fourteen shires. It was likewise exported to foreign places for the same purposes, but chiefly used in lime-burning, and, in its cold state, to improve and manure the soil. Pliny the Elder (A.D. 43–79) writing about our ancestors says, "Another kind of white chalk is Argentarium, which is brought from a depth of 100 feet, the pits usually made narrow at the mouth, internally, as in metal mines, the vein spreading out"

[1] See Appendices "*d*," "*k*," "*v*," "*x*" and "*z*."
[2] See Appendices "*e*," "*f*," "*h*" and "Additional notes."
[3] See Appendix "*v*."
[4] See Appendix "*m*."
[5] See "Additional notes."
[6] See Appendices "*a*," "*b*," "*q*," "*h*," "*k*" and "Additional notes."

(*Natural History*, Lib. xvii). Again he says, "chalk is extracted by means of pits sunk like a well," and that "this kind is chiefly used in Britain" (*Natural History*, Lib. xvii, cap. 8). Camden (about 1610), whom Mr. T. V. Holmes rightly considers a great and sound antiquarian, in speaking of pits at Faversham (Kent) says, "I for my part cannot tell what to think of them, unless they were those pits out of which the Britons in old time dug forth chalk or white marl[1] to dung their land withal, as Pliny writeth," alluding to the aforesaid passage from the *Natural History*. Here, it is plainly observable that Camden at any rate understood Pliny to mean that the chalk was excavated from the ancient pits for the purpose of manuring the land, but we shall have more to say to Camden presently, when he comes to refer to the Tilbury pits.

Now, what authority have we for stating that the British exported chalk in the ancient days? Well, Dr. Beeby, in a clever little pamphlet read before "The Friends in Council" at Bromley in 1870, informs us that "An altar or votive stone is stated to have been found in the seventeenth century in Zealand, with an inscription showing it to have been dedicated to a goddess, in gratitude for her preservation of his freight, by Secundus Silvanus, a British chalk merchant." Many historians aver that British chalk was much prized even before the Roman invasion, and there is no reason to doubt the fact, since from the days of the Phœnicians, minerals of various kinds were sent from our shores. The next important piece of historical evidence which I adduce is taken from the second edition of (Lambarde's) *Perambulations of Kent*, published about 1576. To this I draw special attention, since it appears to be the book from which succeeding historians like Hasted, Morant, Camden, Gough and others, quote almost verbatim, but at the same time some of them omit, for reasons of their own, what I consider vital points. In the edition aforementioned Lambarde says, "There are as well in the open heath near Crayford as also in the closed grounds around it, sundry artificial caves or holes in the ground whereof some have 10, some 15, some 20 fathoms deep at the mouth and thence downwards narrow like to the tunnel of a chimney or a passage of a well; some have sundry rooms or partitions one within the other, strongly vaulted and supported with pillars of chalk, and in the opinion of the inhabitants, these were, in former times, digged for the use of chalk[2] towards building as for to marle or amend their land therewith."

Then, after, as here, giving the opinion of those who ought to know best, viz., the inhabitants of the place, he quite gratuitously introduces his own pre-conceived opinion, viz., "But I suppose they were made to another purpose also, by the Saxons our ancestors, who after the manner of their elders used them as receptacles and places of retreat for their wives, children and portable goods in the time both of civil dissension and foreign invasion. Besides that, many beasts have tumbled into them. It happened to a late noble person, in following his hawking, not without great peril of his life, to fall into one of them that was at least 12 fathoms

[1] See Appendices "*b*," "*e*," and "*k*."
[2] See Appendices "*c*," "*e*," "*f*," "*i*," and "*z*."

deep." Hasted (in his *History of Kent*, p. 211) certainly gives the quotation almost in full, but Gough (in his *Additions to Camden*, 1799, vol. i, p. 214) omits the vital sentence about the "opinion of the inhabitants," and so succeeding writers, following Gough, shut their eyes to the chalk pit theory, and pin their faith to the more fanciful one put forward by Lambarde himself, who had never descended a denehole at all, and who, therefore, was unqualified to judge of their use.

We now come to Camden's own evidence, which, so far as I can see, has been —like Mr. Meeson's—misquoted and perhaps unintentionally misrepresented. Mr. Clift, a most logical reasoner and no mean antagonist if one happens to cross swords with him, in searching the various editions of Camden, arrived, quite independently, at the same conclusion that I did, viz., that Camden cannot be cited as a witness for the granary or habitation theory concerning deneholes, but quite the opposite.[1] For instance, in the edition of his great book, as translated by P. Holland in 1637, on p. 334 we read thus of the pits at Faversham, Kent:— "Nigh thereto as elsewhere in the Countie are found pits of great depth which being narrow at the mouth and very spacious beneath have their certain distinct rooms or chambers (as it were) with their several pillars of chalk. Concerning these there are divers opinions. I, for my part, cannot tell what to think of them *unless* they are those pits out of which the Britons in old time dug forth chalk or white marl to dung their ground withal, as Pliny saith." Then, after giving Pliny's quotation, he continues: "Unless that a man should think that our English Saxons digged such caves and holes to the same use and purpose as the Germans did of whom they were descended." Here Camden favours the chalk pit theory, only giving as an alternative the granary theory, but neither he nor Lambarde had ever personally explored them. There are at least ten editions of Camden published since the first in 1586, and it was from one issued in 1607 that Gough quoted in 1789 (as those enquiring can ascertain easily).

We now come to what Camden says about the[1] Tilbury holes, viz., "Near unto Tilbury there be certain holes in the rising of a chalky hill sunk into the ground ten fathoms deep, the mouth whereof is but narrow, made of stone cunningly wrought, but within they are large and spacious, in this form (here follows a rough plan of a double trefoil-chambered denehole), which he that went down into them described unto me in this manner, of which I have nothing else to say except what I have delivered already," *i.e.*, what he had said about the similar pits at Faversham. We observe, however, in this extract that the historian in 1607 or thereabouts does not mention Hangman's Wood as part of the "chalky hill," since it in all probability grew around these holes at a much later date, long after they had been abandoned, and this is borne out by the fact that none of the trees or stumps in Hangman's Wood are of great age. But he does mention, that the steining stones "cunningly wrought" were all in position in his day. What do we infer from this? Three things: first, that Hangman's Wood, as we now name it, was not in existence in 1607, hence could not be a hiding place;

[1] See Appendices "*x*" and "*z*."

secondly, that the fact of the flints or steining stones being in position tells altogether against the antiquity of the pits, for in Essex flint and stone of any kind is too precious to be left for long exposed on the surface of a disused pit; some of course were found at the bottom of the shafts. Thirdly, that the place was far too open and bore too much the appearance of a lately abandoned chalk quarry (if indeed abandoned at all at that time) ever to have been even a "secret granary' or anything of the kind. There are seven or eight other reasons to follow which render such fanciful theories altogether untenable.

References to these and similar pits are given in Palin's *Stifford* and *More about Stifford*, by Mr. R. Lloyd Williams, Mr. Philip Benton and the Rev. R. H. Killick (formerly Rector of Chadwell St. Mary), but the only point worthy of note just now in these references is that mention is made of "some of them" having "a bench of chalk left round part of the bottom as if for seats."

In Mr. Benton's words, p. 40, "At the extremity of two or three was a flight of steps or ledges about 18 inches wide. The stairs or ledges alluded to seemed quite fresh, and not at all used." These ledges, which Mr. Benton and others, both before and after him, took for seats and even altars, although they, confessedly, showed neither marks of usage or inscription, have after all a very simple explanation, and some good specimens may be seen in the lately re-opened deneholes at Abbey Wood. They are simply ledges left, one above the other, in order that the workman may reach the upper part of the walls with his pick, and especially to enable him to reach the roof during the process of extending the chambers. I have seen the same ledges at two chalk mines now being worked at Plumstead, Kent, and the ledges are likewise observable at Chislehurst and elsewhere. Writing to the *Standard* about a year ago, in an article headed "The Chislehurst Cave Myth," Dr. E. A. Baker of Eltham (who, I believe, was accompanied by that very shrewd observer, Mr. A. L. Leach of "Giltar," Plumstead), mentions that "at the end of certain galleries stand deep shelves or tables of chalk." These he states "are nothing but the benches left unremoved by the miners working on the bottom canch system,[1] which means that they attacked the roof first, afterwards cutting away the mass of chalk on which they stood to ply their tools. When the mine was forsaken, probably on the falling in of the lease, some of these bottom canches were not cut away." Dr. Baker, in a letter to me this year, likewise identifies the alcoves as "unfinished galleries," and Messrs. T. E. and R. H. Forster in the article on the Chislehurst Caves (*Journal British Archæological Association*, 1904, pp. 89, 90) are quite certain that this is the correct explanation. "The fact that the system of working with a 'bottom canch' (or step) was followed in the middle mine, affords a simple explanation of the supposed altar tables.[2] They are evidently portions of the bottom canch which have been left for the miner to stand upon as he continued the working of the upper part of the chalk. In some cases the whole of the bottom canch has

[1] See Appendices "*s*" and "*t*."

[2] See Appendix "*e*."

not been removed before the mine was given up, but, in a few cases, a few feet have been left forming a shelf or[1] table." The precise nature of these steps was brought under my notice some years ago by the late talented young antiquary and architect, Mr. Ernest Godman, who, writing to me on the subject, says, "In general nature and form the Chislehurst caves are very similar to the deneholes in Hangman's Wood at Grays, and when I was in Gloucester last I met a man from Kent, who had lived in Chislehurst all his life. The talk, which was of the general nature of a country inn conversation, was mainly antiquarian, and the old man talked of the same caves, pooh-poohing the idea of their mysterious and religious origin far back in the days of antiquity. He said he had for years as a boy—about forty or fifty years ago to be more correct—helped to dig chalk from these same pits, and that the altar about which so much talk is made was a production of his own and, I believe, of a fellow workman for quite ordinary purposes."

Charles Dickens gives us a hint in one of his books as to how a false antiquity may be either accidentally or intentionally attached to any subject, but the most amusing case of the kind I am acquainted with is recorded in the *Church Standard* of 1903 thus:—"In one of the United States of America a curious stone altar was unearthed with the following letters inscribed upon it, apparently well worn with age and ill-shaped, as by some rude semi-barbarous sculptor, viz.:—

LIRPAFOTSRI
FEHTSISIHTLOOFUOHT.

"Above the mystic letters appeared some signs in the resemblance of a cross, a circle and a triangle. Woodcuts of the find appeared in several papers, and much learning was displayed in the endeavour to account for this curious 'find,' but it speaks badly for the subtlety of the antiquarian mind to learn that several weeks elapsed and many clever essays were written on the subject before the hoax was discovered."

In the *Illustrated London News* for September 28th, 1907, occurs a glowing description of the Chislehurst caves, with two sheets of illustrations and a plan of the passages[2] taken from a survey made by a mining engineer. At one side of the passages in the middle series plan I see plainly marked two "shafts," a "well," and no less than six "altars," all comparatively close together. The description at the bottom of the page reads thus:—"The earliest of the excavations are those now known as the middle series, which form an intricate labyrinth, probably constructed in Druid times for religious purposes, and possibly also for storage of grain and other valuable productions, forming at the same time temple, seminary, storehouse and refuge. In a remote chamber Lord Avebury scratched his name in 1852 upon a smoked piece of wall." On another page we read of deneholes there, and that "there are evidences that the holes were used as places of refuge and also for worship, for in the gallery are still to be seen altar tables originally

[1] See Appendix "*e*."

[2] See Appendix "*f*."

druidical, but used again by refugees at the time of the Reformation. The entrance was by deep shafts, and the descent was made by notched poles or by footholes cut in the sides of the shaft." Again, underneath the photograph of a well is the information: "Ancient British well in the inner working." Now, by personal exploration in the company of others, I saw that one at least of these two shafts was lined with modern brick, and bore a very distinct resemblance to certain shafts in chalk mines at[1] Hemel Hempstead, Wickham and Plumstead, used to-day to extract chalk for brickmaking and limeburning. So I was not surprised to learn afterwards that about the year 1840 no less than five kilns were working at Chislehurst. I had found the remains of similar kilns beside chalk excavations at Eaton and Ketts Hill (Norwich), at Botany Hill, Purfleet, at the old Duvals chalk quarry and the "Dell" open quarry, Grays, and I have no doubt if search were made remains of similar lime kilns would be found beside other woods.

Then, it is contrary to what historic evidence we have, that the Druids resorted to underground caves. Their temples were in groves, or in the neighbourhood of the old stone circles, on plains, and it is most unlikely that any set of worshippers would require six altars all within a short distance of each other. The story appears still more incredible when we find the so-called altars (*a*) form portion of the main gallery (*i.e.*, they are not separate from it); (*b*) have no special shape; (*c*) have no inscription; and (*d*) bear no mark of fire, blood or refuse.

Roman and British altars have been discovered in various parts of the country to Jupiter, Mars, Apollo, Ceres, Minerva, Victory, etc., but they are usually of certain well known shapes and inscribed with letters and designs usually representing the instruments or the animals of sacrifice, and Celtic altars one would expect to be somewhat similar, but here we have merely six benches or steps to found such a theory upon, and they still remaining as part of the wall of chalk.

The hole, at Chislehurst, at the side of one of the main passages again, is no hiding place, but a pot hole, the sand of which has forced its way through the chalk side and poured itself on the floor of the passage. As regards the little twisted tunnel leading from the outer to the middle workings which the guide shows one as a "treasure chamber of the 'Druids,'" there remains no doubt that it is, as Mr. R. H. Forster maintains, a mere trial passage or boring made by a workman to test his closeness to the second mine; in his own words, "He did not at first drive in quite the right direction, and so was forced to make a turn before he could hole through into the workings that he wished to prove." It has recently been enlarged, which serves to obscure its original object.

Mr. Reader and I found a very similar little excavation while exploring[2] Gregory's mine, Plumstead, where the workmen discovered, just in time, that one of the large galleries—if continued a few feet more—would have entered the

[1] See Appendices "*i*," "*l*," "*t*," and "*y*."

[2] See Appendix "*t*."

gallery of another mine at right angles and so trespassed upon the property of a stranger. As to the Roman or British well, which I have since ascertained to have never been more than 42 feet deep, and to be only an experiment for ascertaining the water level, but not to have been used as a water well[1] at all (to leave several other points aside), my suspicions were aroused, on the occasion of a second visit, by the apparent neatness and freshness of the flint lining, and by the quality of the mortar in the lining, hence I was not at all surprised to receive the information in the following letter dated from 9, The Parade, New Eltham, Kent, September 3rd, 1908, viz.:—

"Dear Sir,—I wrote to the *Standard* because I don't think it right for anyone to assert that they (the Chislehurst Caves) are historical. In 1845 I went, with my father and a Mr. Blundell, down into these pits, going down one of the shafts in a basket worked on an endless chain. At that time the chalk was used for making lime, and my father supplied the 'breeze' for the fires—five in number. The well in the pits was not dug before 1863, and a man named William Soaper helped to dig that well about the same time that the Chislehurst tunnel was going on, let Mr. Nichol say whatever he may choose. Mr. Edward James, of 'The Ramblers' Rest,' Chislehurst, Mr. James Twitcher, Gardener, Chislehurst, and Mr. Teesdale, Common Ranger, Chislehurst, will bear out this statement, the latter of whom worked in these pits. I am, sir, your, etc., Thomas Wood."

This, then, is positive proof that the middle series of galleries including the six altars, the lined shaft, the twisted tunnel and the well, in the middle series, are all modern, comparatively speaking, but some of the remote workings doubtless have an antiquity of several hundred years. Hence, the middle series, from the evidence, has absolutely nothing to do with the Druids, Romans or Saxons. If further proof were needed of this, I may say that in an interview with Mr. H. W. Smith, of "Earde Cote," Picardy Road, Belvedere, Kent, who assisted me in some explorations, he mentioned the fact that in his early days, about 1850 to 1860, he has seen the little lorries filled with chalk, for agricultural purposes, emerging from the side of the cliff at Chislehurst, has seen it spread in little heaps on the land, and also extensively used for the[2] foundations and floors of cowsheds, barns and farm buildings. It seems as if at Chislehurst, as in other places, the workmen first drove down shafts from the highest ground, in former times, tunnelled in several directions on a given plan, leaving vast pillars, from 15 to 25 feet square, to support the roof, and, then, at a later period, about 1850 or 1860, having better machinery available, laid down rails and put on lorries (after breaking an opening into the side of the cliff) for the sale of chalk as just detailed.

The introduction of the railway, bringing lime and limestone (which makes better lime than top chalk) into the district at cheap rates, together with the introduction about the same time of all kinds of artificial manures, caused the chalk trade and lime burners' business to cease, and in a comparatively short period the

[1] See Appendix "*f*."

[2] See Appendices "*h*," "*i*" and "*l*."

mine was forgotten until the re-opening of the approaches to the old workings a few years ago. I think with Mr. R. H. Forster and Mr. C. W. Dawson, that it is possible to trace the evolution as it were, of the primitive chalk well, with its bell shaped base (where the material was extracted with the very rudest implements) to the double trefoil denehole (with its terminal chambers, in which the barrow was used as well as the shovel and basket) and on, until we come to the elaborate chambered mines of Plumstead,[1] Wickham, Chislehurst, Norwich and Mountfield (near Battle), where the latest machinery and steam plant is used.

The brothers Forster (on p. 98 of their paper referred to previously), say, with much truth, that the double trefoil design of the typical denehole (and we have many of all sizes in Stifford and West Thurrock, as well as in Kent), "is in reality a strong confirmation of the chalk mine theory." The differences in shape which we find in them offer no obstacle as "the plain bell pit marks an earlier stage in the history of mining—earlier, that is to say, not necessarily in point of date, but in point of development, just as we find contemporary races in different stages of culture, one for instance, being in the Neolithic stage, while another is in the bronze age, and a third in the iron, so, a primitive system of mining may have existed at the same period as one more advanced." Local conditions, no doubt, had a good deal to do with it, and so conservative are some, that they prefer following in the same old rut as their forefathers, notwithstanding the general advance of the world around them.

In Brightling, for instance, the machinery is still of the very rudest description, consisting only of a wooden cylinder balanced upon the forks of two trees to act as a windlass, with curved handles of wood and a simple rope with a noose (or sometimes a wooden trugg, *i.e.*, wooden basket, at the end), to draw up the excavated material.

Although we have our electric and gas lights in common use, people still use lamps and candles in country places, and I have seen—in a remote fishing village in Ireland—fishermen use rushes steeped in herring oil, to read and work by, not twenty years ago, and, in the same place, viz., Ballyconigar, co. Wexford, have often seen the natives make their own houses, building them piece by piece, of marl and straw (or rushes), beaten together into a thick doughlike substance, with which the walls were made, and when finished, the roof was thatched, while the floor was laid down with marl and sea sand, stamped hard, and fairly level, by the feet of numbers of the neighbours who offered their services for the occasion. A top dressing of fine silver sand, acted in the place of a carpet, while a good coating of lime-wash took the place of expensive papering; and, finally, a hole in the roof performed the functions of a chimney. In our deneholes, however, we have no such evidences of their use as dwellings, no marks of fire, or smoke, or remains of food, nor cast away tools of primitive pattern, but, on the contrary, perfectly clean rough hewn walls and roof (except where discoloured by iron

[1] See Appendix "*t*."

deposits) with abundant pick marks on the walls and no marks of rubbing or friction such as would occur if they were used as habitations or refuges. The floors are level, owing to the fact that the excavators took up the chalk according to the flat surface of the[1] "fissures," "jacks" or "slittings," and the same system was pursued in forming the roof. The workmen dug until they came to a layer or "slitting" which was fairly level and sound. This they followed along sometimes for 50 or 100 feet according to the designed length of the chamber (in denehole), or gallery (in mine), and so secured themselves against a fall of the roof, besides making the work of digging much easier for themselves, as a shovel or flat faced crow-bar introduced between the edges of a fissure, or slitting, and prised upwards (or downwards if the roof was being worked) would cause the dislodgment of a great quantity of chalk, and at the same time leave a surface as level as a table. It is the tendency of the deeper chalk to come off in layers, which gives rise to the "steps" or benches which have been mistaken for altars, and which likewise makes it easy to chop it up with a spade, or saw it into stout blocks for building (or to dry "whiting" on, as seen in the Grays Chalk Quarry Works to-day). This brings me back again to the uses of chalk, and its use, in a great measure, depends on its purity, density and chemical qualities. It is necessary to enter into this, in order to find out why the denehole excavators chose one part of a field or hill, more than another in which to sink shafts. Chalk deposits, as a rule, for the first 30 or 40 feet—unless from where 50 to 100 feet of sand and clay is superimposed[2]—show much impurity, as we saw before.

The deposit is loose and dangerous to tunnel into, therefore all the "farm denehole," as we may call them, are small in size, with short shafts, because the farmers only took from them the material for local dressing of their own fields. At the farm of Mr. Vellacott (*i.e.*, Tunnel Farm, West Thurrock) the owner showed me a field of sixty acres where he declares that over forty deneholes have fallen in, from time to time, especially after heavy rains. Mr. F. W. Reader visited one of them in a ploughed field, the crown of which had collapsed just as the plough passed over it, to the great danger of the horse. The custom here, when a case of this kind occurs, is to put some branches across the bottom of the shaft, fill in with faggots and finish off with soil; crops are then sown on the surface, and all goes well until the next rainy season, when probably another collapse takes place. A great mass of evidence has been steadily accumulating the last fifteen years to show that seventy or eighty years ago these "farm deneholes" were very common in a great many of the English counties. Besides the evidence collected by Mr. W. T. Vincent from Mr. T. A. Hester (locating them in Oxfordshire), from Mr. F. W. Elliott (locating them in Buckinghamshire), from Mr. Buckland, Mr. C. Roach Smith, Mr. Bland, Mr. George Clinch, F.G.S., and Mr. J. T. Hatch (locating them in Kent), and the evidence of Sir John Evans, Mr. J. G. Waller, F.S.A., Mr. R. H. Norris, Mr. John Harris and others (locating them in Hertfordshire) Mr. John Parish, Mr. Philip

[1] See Appendices "*o*" and "*r*."

[2] See Appendix "*m*."

Benton, Mr. J. E. K. Hutts and Mr. R. Meeson (locating them in Essex), Mr. James Pye[1] (in Berkshire), Lord Avebury (in Norfolk and Suffolk), I, likewise, have secured abundant facts corroborating all this, and extending the observation to Gloucestershire, Sussex, Hampshire, Wiltshire and Surrey, and I am quite sure the list of places is by no means exhausted. Mr. A. C. Blake (of "Nailsworth," Gloucester), father to Dr. F. Blake, of Grays, makes a statement as follows:—"I recollect as a young man—and having been about in several counties—that chalk was dug on the denehole plan, especially in the parishes of Greately, Cholderton, and Langley in Hampshire, also in Porton and Ramsbury in Wiltshire, besides many other parishes. It was the ordinary process pursued by the farmers, who, thus employed their men during the winter, when work was slack. Phosphates and artificial manures have now taken the place of chalk as a manure for land. The shafts were made like wells, and widened out into cavities below, the object being to get down into the chalk. In many cases the chalk was burnt first into lime, and then spread on the land, so that there were plenty of kilns about in my early days, about sixty years ago."[2]

If further proof were needed, we have the direct evidence of Young in his *General View of the Agriculture of Herts* (London, 1804), and of D. Walker[3] in his *General View of the Agriculture of Herts* (1795). A very full description of the making of farm deneholes is given in quite a new book, namely, *The Victoria History of Herts*, vol. ii, page 130, 1908, where it is said the old farmers of a century ago, having hauled the chalk up through the shafts in baskets, "dragged it out on the field in sledges, sixty to a hundred and even one hundred and fifty loads to the acre," the process being repeated according to the Essex farmers, every fifteen or twenty years.[4]

Considering that it rendered the soil drier, and more friable, broke up the clods, and warmed the land, it is not surprising to read in the *Victoria History* that "Chalking has alone rendered arable farming possible on much of this land" (of Herts). Chalk besides being more pure after the first forty or fifty feet is far more dense and weighs heavier. In order to test this I asked Mr. W. A. Brown[5] (Pit Manager at the Grays Chalk Quarry) to make out a series of calculations on the cubic capacity of a yard of chalk, at varying depths and in different quarries (Mr. Haylock, Manager of Purfleet Chalk Quarry, bearing the same testimony). I was rather surprised, I must say, to discover that, not alone did the chalk vary considerably at different depths, but it likewise varied in different quarries, in the same parish, and even in different parts of the same quarry, not two hundred yards apart. The bearing this has on the fact, that in certain localities numbers of pits are found close together can be readily perceived, for if a stratum of good solid chalk was found in any special spot, the people would be sure to sink as many pits as possible at that spot, and if a company, or large contractor for lime, rented or

[1] See Appendix "*x*."
[2] See Appendix "*d*."
[3] See Appendix "*b*."
[4] See Appendix "*a*" and "Additional notes."
[5] See Appendix "*l*," "*m*" and "*o*."

owned the ground, it would soon become the centre of the lime trade. This I believe to be the secret of the aggregation of the pits in certain localities, and not for any idea of using them as dwellings, granaries or places of refuge. Mr. Brown, in a letter to me dated May 13th, 1908, says "The weight of a cubic yard of chalk varies. For instance on Grays Hill Quarry (or the one on the east side of Stifford Road) it varies from the one on the west side, as much as 1¼ cwt. per cubic yard. Again the top of the cliff in Grays Hill Quarry shows 1 ton 1 cwt. per cubic yard while at the bottom (*i.e.*, 60 feet lower) it shows 1 ton 10 cwt. 2 qrs. As a rule, where the loam is deepest on the top of the chalk, it runs more solid than it does where only a few feet of uncallow lies; for instance, in one of our quarries, where there is only 8 feet of uncallow on top the chalk is much softer and less solid than in another quarry where we have 30 feet or more of uncallow on top."

This is exactly what I found in every case personally investigated, both in West Thurrock and elsewhere. Mr. Brown moreover throws a very important side light upon the reasons for making the denehole chambers on the double trefoil plan, or what Mr. Forster would call the "star-fish" plan, *i.e.*, chambers radiating a certain distance (from 15 to 60 feet) from the centre of the shaft. He calls 60 feet a chalk miner's run, and any chalk excavated further off would be more costly to bring to the surface on the old style of labour, owing to loss of time in transit. "No doubt," he continues, "when the deneholes were made they had to carry the chalk in buckets or baskets, therefore it would be more economical to sink fresh shafts than to carry it an extra distance." This I believe to be the secret of the separate sets of denehole chambers; the terminal chambers of one set not being allowed to enter upon the "runs" of the other gang of men, at work in the second shaft. The same version of the reason of the aggregation of shafts with separate chambers, was given me by the workmen at Brightling where, to-day, one may see three or four sets of men at work on different pits in the same field, one set digging a shaft, another, the material below (in this case, stone, for road mending), a third, carrying away and piling up the road metal, and yet a fourth filling in old shafts with clay and rubbish. Mr. Christy and I noticed in a space of 20 acres, several hundred filled-in pits, besides a dozen open ones. In the case of the excavated chalk, besides the large quantities used on the land and for lime burning, Arthur Young, who issued his work on the agriculture of Essex in 1807, expressly says that a large quantity was sent a great distance away, and lines of chalk waggons could be seen bearing away the material along the narrow roads, the horses struggling under their burden.[1] On p. 224, vol. ii, he notes the change from the horse waggons to the lorries at Purfleet, which resulted in the disuse of twenty-one out of the twenty-five horses formerly used there, "One horse drawing five or six waggons loaded, when running on rails. Ways lead also hence for delivering the broken chalk directly to the kilns, which for this purpose are built in a deeper excavation and coals are also distributed by other ways. From the kilns distinct iron roads lead also to the shipping for delivery of the lime." From some old rate books in my

[1] See Appendices "*n*" and "*t*."

possession, I find that very early indeed in the eighteenth century, and most probably in the seventeenth, a London company leased and worked the Purfleet Quarries for the purpose of sending lime to London and elsewhere for building purposes. Benton writes, in his notes on *The Rochford Hundred*, of 1,000 loads of chalk being placed on 11 acres of land: "Chalking seems to have been the rage in 1800," he says, and we know that when the seawalls round Canvey Island were re-erected in the middle of the seventeenth century over 6,000 tons of chalk were used, and thousands more to form the oyster beds or layers. Touching the chemical qualities of chalk and its effect on crops, from inquiries I made, some claim for it merely a mechanical action in helping to break up the clods, but others claim that it becomes an actual food for crops. Mr. Walker[1] (author of the *Agricultural Report for Hertfordshire*), Mr. Darwin[2] (in his report to the *South Eastern Union of Scientific Societies*, 1898), Mr. John Bannister in his *Notes on Agriculture*, 1799), Mr. W. J. Walden (Principal of the East Sussex Agricultural College), and Mr. S. A. Woodhead, B.Sc. (Public Analyst, Sussex), all say that it has valuable nutritive qualities.[3] The words of the latter are very explicit on the subject. "Calcium carbonate (chalk) is insoluble in water but if the water is charged with carbon di-oxide the calcium carbonate then becomes soluble because it is changed into the bi-carbonate. If the calcium bi-carbonate comes into contact with ordinary lime and water, it becomes changed into the carbonate of lime, which, being insoluble in water, is deposited in the same condition as it was taken up (*i.e.*, as calcium carbonate (chalk).) Below, one gets a more soluble form of chalk by reason of the precipitation above mentioned, which, when laid on land, containing organic matter, unites with nitric acid found in the soil and forms calcium nitrate (nitrate of lime) which is an actual plant food" (from Mr. C. W. Dawson's pamphlet before mentioned). This is supported by the evidence of Mr. Gadd[4] (Expert Chemist to the Associated Portland Cement Manufacturers) who in a letter to me in 1906 says, "Chalk doubtless breaks up the heavy soil mechanically, and is likewise beneficial by conversion into nitrate of calcium, the latter being a direct plant food." So much for the chemical value of the deeper chalk, and we can well understand how even the farmers would prefer the lower stratum if they could conveniently get it as well as the limeburners.

In descending into denehole chambers a careful observer will see, that the little "flecks" raised by concussion around the edge of the pickmarks[5] remain undisturbed in position, which would not be the case if the cavities had been used for any purpose since their excavation, for the slightest friction, either of corn heads or the rubbing against them of skins or clothes, would have destroyed them. He would also see certain "footholds" in the sides of the unlined shafts, at alternate distances apart, which appear to have been used in ingress or egress. It would be exceedingly difficult, slow, inconvenient, and dangerous, for even an active man to attempt to ascend or descend a 90-foot shaft[6] by these alone, hence

[1] See Appendix "*b*."
[2] See Appendix "*a*."
[3] See Appendix "*p*" and "Additional notes."
[4] See Appendix "*p*."
[5] See Appendix "*u*."
[6] See Appendices "*c*" and "*y*."

we cannot suppose that this was the usual mode of ascent or descent, but rather by a windlass, rope and seat as we find nowadays—or, in case the shaft was not too deep, by a ladder. Still these footholds would prove very useful, when perhaps a workman wished to reach the surface at a time when there was no one at the windlass above, for if the windlass rope was left hanging down, he could, without much trouble, draw himself to the top, using the footholds on the way. In case the chamber was so deep that he could not reach the first footholds unaided, a short ladder would relieve the situation. I am aware that Mr. Vincent and some others think that they might not be footholds at all, but perhaps sockets for timbers or "stemples," while Mr. R. H. Norris fancies that these holes might be due to the workmen putting out a foot alternately to steady the twisting tendency of the windlass rope while they were lowered, but I cannot imagine in any case, that these footholds show the ordinary mode of descent, and this is strengthened by the fact that they do not occur in every shaft.

A third point to be noticed, in exploring a denehole, particularly one long unused, is the presence of *rope marks* at the sides of the shaft, more especially at the bottom part. They can still be seen at Hangman's Wood, and more plainly still at Bexley where, from a close observation, I came to the conclusion they were scored by a strong ordinary rope and not by a rope of hide nor by one of wire. This clue reduces the plea for their antiquity too. More than 150,000 tons of chalk were taken from the deneholes at Bexley, yet no heaps of this material lie anywhere around, and the same may be said of those situate in the other woods, this, in itself, being strong evidence that the vast chambers were dug for the material and not for other purposes.[1] Not to mention the "scratchings," of melancholy interest found around the walls of the deeper holes made by the mad and vain efforts of unfortunate dogs and other animals to escape, and the various bones which lie upon the heaps of sand on the floors, none of which belong to the prehistoric animals (see[2] Mr. E. T. Newton's remarks on p. 258 of the Hangman's Wood Report) we now arrive at what I conceive to be the strongest argument of all against the theory of the chambers being either granaries or hiding places, viz., that fact that at the bottom of every shaft, in all places where the deneholes abound, lies a cone of Thanet sand of far greater volume than can be accounted for by the mere attrition of the shaft side, or of the giving way of the mouth into a funnel shape. Mr. W. H. Steadman has gone into this matter very thoroughly, in a paper read before the "Northfleet and District Scientific Society" in 1906.[3] I believe he was almost the first to notice the point. In the same year I drew the attention of several antiquaries to this fact, when I found immense heaps at Bexley and yet again at Gravesend. Then Mr. Clift arrived, independently, at a similar conclusion (*Journal of the B.A.A.*, June, 1908), and in the June journal, I gave additional evidence from Purfleet in "Notes on Deneholes." These cones of sand usually contain three times as much sand, if not more, as could possibly have

[1] See "Additio notes."
[2] See Appendix "*n*."
[3] See Appendix "*j*."

broken away from the shaft, and frequently reach almost up to the roof of the cavern, spreading out on all sides below to the depth of 6 to 8 feet and, at Abbey Wood, even more. The only safe and logical opinion one can reach is, that these shafts, after the chambers were emptied of their chalk and disused in consequence, became the receptacles of all the Thanet sand and loam excavated from newer shafts which the workmen poured down to get out of the way. I will not burden this paper with the statistics of the cubic capacity of shafts, chambers, cones, etc., since they can be seen in the three papers mentioned, but I ask, if this be true—What becomes of the granary and refuge and all the other theories? Does it not show conclusively that the makers of the pits considered the empty chambers of no further practical use except as receptacles for superfluous sand and clay, just as the workmen at Brightling and at every other place where pits are concentrated, use the old pits to hold the *débris* of the new, until they gradually fill up. By all the laws of evidence this theory, as to their primary use, holds the field; hence all that has been written concerning the other nine theories (those of their use as (1) Temples, (2) Pitfalls, (3) Slave prisons, (4) Burial caves, (5) Dwellings, (6)[1] Flint mines, (7) Water wells, (8) Granaries, and (9) Refuges) vanishes into thin air, and "like the baseless fabric of a dream, leaves not a rack behind," as Shakespeare says. They become inflated bubbles like the story of King Cunaboline's gold mines. But if the primary use of denecholes, like those at Hangman's Wood, Abbey Wood, Dartford, Bromley, Erith, Woolwich, etc., be so commonplace, and the mines at Chislehurst, St. Leonards Hill (Thorpe Hamlet), Mousehold Heath, Wickham and Plumstead, are proved to be equally so—there is nothing to prevent them from having been put to secondary uses, provided we do not, as Mr. Vincent says, "Import into our conclusions as facts, the unsubstantial romance of our imagination, thereby laying the foundation for a vast amount of error."

Amongst these secondary uses of chalk caverns, I may mention that, at Rheims, certain caves, from which millions of yards of chalk were taken for building purposes, and which had lain idle for centuries, are now utilised by certain great wine exporters, who have thousands of bottles of champagne stored there. Again at Thorpe Hamlet (Norwich)—where I was curate for three years—Messrs Thompson and Co., wholesale ironmongers, use the tunnels and cross passages in the "chalk rising" (from which upwards of 25,000 "yards" of material have been taken many centuries ago, for lime in the building of Norwich Cathedral) as storehouses, for enamelled goods and tin plates, having fixed two large doors to the entrances of the two main tunnels, the latter over 130 feet long by 10 feet high and 8 feet wide. Some few years ago, not many yards from these tunnels, a few smaller excavations were discovered, which an antiquarian declared must have been "punishment cells" for the refractory monks of an old Priory, that once existed close by, but one of my parishioners there at that time, when I asked him about the "find," said "these are the very chalk caves from which my grandfather

[1] See Appendix "*q*."

made his money by limeburning." Finally, I see it is stated that at Mucking Wood about three years ago, some subsidences took place, apparently in the Thanet sand and gravel. The caves thus revealed were used as an argument, forsooth, to prove that—as deneholes exist in sand (as well as in chalk) at Mucking, therefore they were not excavated for chalk alone but for "hiding places" or "sepulchral chambers." Now, where the Thanet sand overlying chalk is over 50 feet deep and still has, underneath, any denehole chambers, if the crown of one or two collapse the sand is precipitated through the fracture and fills up the chamber completely, leaving overhead a hole perhaps 10 to 15 feet deep. An inexpert person, seeing only a sand hole in such case, might easily draw the conclusion that the hole was originally merely a sand hole the crown of which had given way. Just a year ago a case in point occurred not far from Palmers College, Grays, in another piece of "rising ground."

One morning a man, living in a house on the road from Grays to Orsett, not 100 feet from the New Mission Hall at Little Thurrock, was alarmed to find that part of his back garden had disappeared, leaving a chasm about 18 feet deep by 12 feet in diameter, the bottom and sides of which contained nothing but gravel and sand. Then, within the next fortnight, four other holes, not quite so deep, appeared in the neighbouring gardens and roadway. It was, at first, thought that a subterranean water course might explain the phenomenon, but from the situation of the subsidences and their distance from each other, I concluded that a set of denehole chambers had collapsed, the sand and gravel quite filling them up. Acting on this surmise I caused borings to be made at various points in the immediate neighbourhood to ascertain the top level of the chalk, and found that, whereas the chalk level was much nearer the surface (*i.e.*, 16 to 18 feet nearer) in all places where the ground was not disturbed, yet from the surface to the chalk at the base of the subsidences it showed a depth of 38 to 40 feet, proving that at some time or other the chalk underneath the area of the subsidences had been excavated. I was told afterwards, that some 40 years previously, persons had taken considerable quantities of chalk from that portion of the crest of the hill to make lime. The Mucking Wood subsidences I have no doubt can be similarly explained. In fact Mr. Seabrooke and I saw, at Swanley, very similar caverns in the Thanet Sand due to purely natural causes but seemingly at first sight artificial. When at Chislehurst, just over some of the piles of sand which broke through the roof, I noticed exactly similar beehive shaped holes.

This paper cannot conclude better than with a quotation from Mr. Clift's essay (viz., *Criticism of the Hangman's Wood Denchole Report*, p. 129). "The only conclusion that is unassailable is, that deneholes of this type (that of the chambered type) were excavated for the sake of the material in which they occur, whatever its nature. In the case of the Hangman's Wood pits, that material was chalk, and no matter for what purpose the chalk was used, these pits were simply constructed to obtain it, and there is absolutely no evidence in existence which lends the slightest support to any other explanation of their purposes."

Appendix.

(*a*) Mr. Darwin's Report (S.E.U. of Scientific Societies, 1898); Sussex.

"The whole of this area is covered with countless thousands of pits resembling the deneholes of Essex and Kent. They represent, in fact, the usual method of procuring the limestone, wherever the stone is quarried from a depth below the surface of the ground. The workmen, who with their forefathers, have been accustomed to this industry all their lives, perform the work with wonderful celerity, the stratum of stone having been ascertained to exist near the surface, a well, about 3 or 4 feet in diameter, is commenced in certain blue and brown shales, and, usually, reaches the limestone within 40 feet, sometimes 50 or 60 feet from the surface. The cavity above the stone, is then belled out on all sides to a diameter varying with the stability of the strata. Sometimes the cavity is 15 or 16 feet in diameter, sometimes considerably more. The stone is then removed, and four small arched lateral chambers are dug at four equidistant points in the side of the bell-shaped cavity, so as to extract as much stone as the pitman dare without endangering his life. While the last pieces of stone are being removed from the pit, one of the men commences another shaft, about six yards away, so that it may be well forward by the time the other work is completed. Sufficient room is scrupulously left, to prevent one chamber encroaching too near to the other; and it is therefore necessary to adopt some regularity in their design, and so the operation is repeated, over and over again, without any variation of importance. When asked why they do not run galleries and mine the stone with timbered and propped sides, they say that the way they do it occupies less time, is least expensive, and that they work on the same general design because they know by experience that it is a safe one. Indeed the whole operation of digging a well, and getting out the stone, is only a matter of a few days and they then fill one pit with the *débris* of another."

(*b*) Mr. Walker's *General View of the Agriculture of Herts*, 1795 (New Edition, 1904):—

"The undermentioned method is pursued in chalking land and the persons employed therein follow it as a trade, viz., a spot is fixed upon nearly centrical to about six acres of land to be chalked. Here a pit about 4 feet in diameter is sunk to the chalk. The pit is sunk from 20 to 30 feet deep and then chambered out at the bottom. That is, the pitman digs or cuts out the chalk horizontally in three separate directions, the horizontal apertures being of sufficient height to admit the pitman working in them with ease and safety."

(*c*) Evidence of Mr. Daniel Margrove, aged 70, formerly foreman with Mr. D. Norris, of the Brick Kilns, at Hemel Hempstead, taken August 10th, 1908.

"I dug, or rather superintended the digging of the last shaft at Mr. Norris' kiln, in 1888. We could not find proper chalk under 80 feet. At the bottom we

started, at first, with three chambers or arches only, and, after 12 yards or so, struck out some side chambers. The chambers made a run of about 20 yards, the extreme limit being 25 yards from the shaft. Any further excavating in the same direction made it too far to wheel to the shaft, made harder work for want of air, and cost the master more to dig. In each chamber there was only room for one man to work, and he went from chamber to chamber while another man wheeled the piles away which the first one picked down. I also saw bell pits made in fields for chalking the land, but where lime is required the material must be block chalk, deep down. Three men worked in a denehole one 'picking,' one 'filling,' and one 'hauling up.' Mr. Orchard, of Woodwells Farm, Hemel Hempstead, even now chalks his fields from a denehole in the winter. The lime we burnt in kilns on the spot, and sold it to people near and far; some of it went on fields and some for building purposes, but the railway spoilt the trade by bringing in limestone."

(*d*) Evidence of Mr. George Smith, worker on Mr. Redington's farm adjoining Hangman's Wood, September 10th, 1908, taken on the spot.

"I am sixty-seven years of age, and before I came here, I worked as navvy, helping to dig the tunnel at Mosley Green, Gloucester. While working at Forest Dean, near Lydney, I noticed that, about 20 feet below the surface, a vein of coal existed; and when cutting through a section for the tunnel, we frequently came across shafts and chambers in the coal. The shafts were somewhat wider than the ones in Hangman's Wood, but the chambers were much the same shape. These shafts were close together, generally about 18 feet apart. We came across about thirty within a limited space, but from the appearance I should say that they were all over the district. The curious part is, that every single one was filled up, and none of the inhabitants knew of their existence until we found them. There were no circular depressions to indicate that old shafts were once there, nor did anyone recollect hearing of coal being got out of them. Of course, the country for miles around is honeycombed with tunnels, belonging to coal mines, but very far down in the earth; none so near the surface as this first vein, and they do not now mine coal on that plan. The chambers below were like those at Hangman's Wood over there, but smaller, as the overhead soil was most unsafe and they dare not venture far in, I suppose. The chambers varied in number, sometimes four, sometimes five, and sometimes six, according to the nature of the seam. They must be very old, because there are oak trees growing over them, eighty years old or more, much older than any trees in Hangman's Wood. I suppose they did not continue the chambers into tunnels because of the foul air or black damp, or else because of the rude implements they had for conveying the coal to the shaft. With regard to digging shafts, if the soil was like that at Hangman's Wood it would be very easy work as it cuts like cheese. For instance, if I had three men with me I could excavate one of them at the rate of 10 feet a day, or a 50 feet shaft in five days. The pits at Hangman's Wood are merely chalk pits and nothing else. No doubt they sent the chalk away by water."

(*e*) The evidence of Mr. J. Twitcher, of 19, Albany Road, Chislehurst, September 14th, 1908.

"I have but very little to tell you about the Chislehurst caves. About sixty-four years ago they used to get chalk from the caves and burn for lime. A Mr. Noakes rented it, at that time. He used to employ four men to dig. The benches are there because they used to make the top beam of chalk, and then the bottom, burning the flare-burnt lime, and tunnel lime. The lime was sold to the builders and farmers. The men were paid by the day, and once there was a slip of earth that stopped the mouth of the cave up. There was a place where we could see daylight from the inside; this we called the Devil's Chimney. After the earth slipped and blocked the entrance at the side, where they used to bring the chalk out, they had to find a fresh place, outside, to get the chalk until there was another slip of 100 tons of earth, which fell and buried the tools, and then the gentlemen gave up. I am in my seventy-fourth year. There was enough chalk dug to keep three kilns going in my time. The pillars vary very much, fearing the passages might break into one another. There was one trolley which ran to take the chalk to the flare-burnt lime kiln, because it was the farthest way. The other two kilns were near to where it was dug. They used planks and barrows to these two, and picks and shovels. I knew Soaper quite well. He helped me to dig a well for Mr. Wise to supply Bickley Park (assisted by Stephen Monkton and Dick Watson). When I first knew the place it belonged to a man named Dent. My father used to keep the beershop on the top of the hill before the Imperial was built."

(*f*) Evidence of old Mr. Teesdale as supplied by W. Seares, Esq., of Manor Close, Chislehurst, September 12th, 1908.

"I was born at Chislehurst. The caves are nothing else but old chalk workings. The chalk drawn from them being used for top dressing or 'land marling,' as it is called in this neighbourhood of poor hungry soils. Sometimes the chalk was used raw, sometimes burnt at kilns, at the mouth of the caves. I remember the well in the workings being sunk. It was done as an experiment to try whether starting from a low level, the chalk could be pierced, and the water-bearing stratum reached. Two local landowners mined the chalk, whose operations ceased about 1868. Those employed were paid as labourers. This well was sunk 40 feet or so, at which point a little water, not much, was found, but no use was made of the well afterwards. I did not see any bricks made there. I had no hand in the well sinking myself, but was at hand close by while the work was in progress. I, however, worked at the digging of one new shaft, by which the chalk was tapped some quarter of a mile from the entrance to older workings; I afterwards worked at driving headings from the bottom of this new shaft, and the resulting chalk was hauled up to the surface in baskets. The new headings broke into the old workings and so the present through way was made."

(*g*) Evidence of N. W. Sears, Esq., Chislehurst. September 12th, 1908.

"Much nonsense has been written about these undoubtedly pretty old chalk workings. Our local historian, Mr. G. W. Miller, in his *History of Chislehurst*, states that the chalk quarries were worked in Saxon times and gives the '*Archæologia Cantiana*' as his authority. Be that as it may, they are so curiously extensive that they must be pretty old, but they have quite obviously never been anything else but chalk workings. In these days of roots, and other winter foods, one is apt to forget how scarce manure was in the past, when cattle could not be kept through the winter, and what the demand for chalk dressing must have been."

(*h*) Evidence of George Clinch, Esq., F.G.S.

"The *Bos longifrons* died out as late as the second century A.D. (Roman occupation), but it reappeared under another name in the nineteenth century. As for the red deer it was doubtless contemporary with the wolf in these islands and still exists in Scotland, Devonshire, Somerset, Cumberland and Ireland. Touching deneholes, even within my recollection, chalk was obtained in this way on my father's farm in Kent."

Again taken from the *Bromley Record* (of June, 1902) *in re* Chislehurst.

"The walls of the galleries in some places rise 25 feet above the floor; the width of the galleries remains practically uniform throughout. The shorter galleries, as in a coal mine, are more or less at right angles to the longer ones. 40,000 cubic yards of chalk must have been dug out, removed and converted into lime for building purposes or employed for manure for the land. They might date back to the middle ages, perhaps to the middle of the fifteenth century (or even earlier). The industry was finally killed by the introduction of steam railways there. The cuttings made when the railways were constructed, provided large quantities of chalk. Everything seems to point to the conclusion that they were constituted, not for the purpose of making subterranean chambers, but as a result of digging for chalk for making into lime."

In *Some Account of Ancient Excavations in Wellwood and Chalkpit Field, Wickham* (published 1884), Mr. Clinch says:—

"The chalk which is used in some places for improving the soil—if near the surface, is dug in the field where it is wanted, and frequently three or four or more shafts are sunk in the same field, with a view to save the labour of conveying the chalk further than can be helped. I have had the opportunity of seeing the whole process, and I have noticed that the shaft is never carried far into the chalk before it is widened and galleries are then cut out in various directions. As the workman became skilled he would probably dig deeper with a view of reaching the harder and more durable chalk."

(*i*) Evidence of Mr. R. A. Norris in the *Home Counties Magazine* for 1900.

"The method still in use for raising chalk, is to sink pits 50 to 90 feet deep,

and drive galleries in all directions. Some of these galleries are 23 feet high and more to the roof. Recently, two galleries fell in, in an old and disused pit, and an old workman, who had helped to get chalk from this pit, told me, that about the spot where the fall took place the roof was worked out as big as a wheatcock, and that as the chalk in that spot came down easy, they used to have a long ladder and poke down all they could. I know of four separate shafts which have been sunk in a space of three acres, and on other brickyards in the neighbourhood the same thing has been going on probably for centuries."

In a letter to me, dated August 11th, 1908, Mr. Norris continues :—"As to contiguous deneholes not being cut into one another probably the pits were worked by different proprietors, who would naturally keep a boundary, or the pits were worked by separate gangs of men, and no doubt at so much per yard for stuff dug, as was the case in my father's brickyard. Now, gangs of men so working, are very jealous of one another, and would keep a division wall to prevent intrusion on their own particular workings, especially if one pit was easier to work than another. As to cones of earth and rubbish, no doubt this was thrown down to get it out of the way."

(*j*) Evidence of Mr. W. H. Steadman, Dover Lodge, Northfleet.

"The shafts of the Essex deneholes pass through some 55 feet of Thanet sand and have a variable diameter. Assuming a diameter to be 3 feet, the cubic contents of the shaft would be 396 cubic feet of sand, and of a 4 feet shaft, 704 cubic feet. If now, the sand found at the bottom of a denehole is the product of detrition by the atmosphere, the shaft must be gradually enlarged. Let us assume that the shaft increases a foot in diameter from this cause, say from 3 feet to 4 feet—a fairly wide assumption—then the amount of sand falling down the shaft is 704 cubic feet, less 396 cubic feet, which equals 308 cubic feet of sand. This 308 cubic feet of sand would make a conical heap at the bottom of the shaft 6 feet high, and 14 feet in diameter at the base; but Mr. Christy finds a heap of sand 25 feet high, and 18 feet in diameter. This would contain 2,121 cubic feet of sand, so that we would have roughly 1,800 cubic feet of sand to account for (viz., the difference between 2,121 cubic feet and 308 cubic feet). The question then arises, Whence comes this excess of sand ? I suggest that it was thrown down a disused pit when a new one was being sunk. This compels the admission that the old pit had no further use, neither as a refuge, nor a burial place, nor a place of worship, nor anything. In fact, that it was dug solely for chalk, and having ceased to be economical in working, it was abandoned, and made use of as a receptacle for the surplus sand from new pits."

(*k*) Evidence of Mr. William Ballard, Stroud. (Letter May 26th, 1908).

"The only explanation I can give about these so-called deneholes is that the greater part of them have been dug out to get chalk for the land. It used to be thought a good deal of at one time on the stiff loamy land; this class of land requires

lime. I have one in the centre of my fields which I would have great pleasure in showing you. The only deneholes I know of in Temple Farm, have been got out for the land and brickmaking. They say they want a certain amount of chalk to make good bricks. The caves at the back of our house were got out for lime and whiting. No matter where you go, in any part of this district, there seem to be these places, got out by farmers some time in the winter months, when they have nothing for their men to do."

(*l*) Mr. W. A. Brown's evidence. Pit Manager at Duval's Chalk Quarry, Grays. August 6th, 1904.

"I feel sure they are merely chalk pits. We had some almost similar caverns in the chalk here in the works. They were from 7 to 10 feet in diameter and at the mouth just like wells. The shafts went down through the soil about 35 feet first, and then through 15 feet of chalk to the floor, forming chambers mostly round about 15 feet high and 30 feet long. I can still show you one set. They used the chalk for the land as manure, also for whiting and for building blocks instead of bricks or stone. There is a range of small houses near the railway bridge built of those blocks, called 'Chalk Row.' When not exposed to the air it was and is very durable. We have hundreds of such chalk blocks now in the works. They are cut out of larger blocks with saws and made the required sizes. They harden with time."

(*m*) Foreman Smith's evidence, Northfleet Coal and Ballast Cutting at West Thurrock, March 6th, 1908.

"The chalk is exported for white lead, whiting, white paint, etc., by the thousand tons. Last week one ship loaded up 3,000 tons of block chalk for purposes of this kind in America. The top chalk does for farm purposes or for cement, but not for particular purposes. A yard of chalk here at a depth of 60 feet differs in density from a yard of chalk at 12 feet from the surface in the proportion of 18½ to 16½ in weight. Block chalk could not be conveniently obtained by entering the side of a cliff, as the upper slittings could not be removed and the picks would break it up. Besides there would be only about 30 feet of block chalk out of 100 feet of cliff front and the 70 feet would have to be removed first.

"Our Company made a tunnel through a cliff 70 feet high from the level, the tunnel being 9 feet wide by 8 feet high and then at intervals of 50 yards, bored shafts *upwards* to the surface in order that the wagons might run in on rails to the tunnel and be loaded by pouring down the surface chalk through these shafts. The latter are not much wider than a man's waist and excavated *upwards* by a man using a small handpick and going gradually upwards by foot-holes on either side. Thus the excavated chalk fell down, instead of having to be hoisted up with a rope and basket. The flints were at one time extensively used in the manufacture of bottle glass and for glazing pottery in the north of England. Much chalk is sent from here up the Baltic, but we have many rivals now and chalk has fallen from 2*s.* 10*d.* a ton to less than 1*s.* a ton."

(*n*) Foreman W. H. Smith of Messrs. Rutt and Gutteridge's lime kilns, Maldon, Essex, September 22nd, 1908.

"These kilns have been carried on for about two hundred years, but there are two others at Haybridge, also for burning lime from chalk. Our kiln takes 19 tons of block chalk at one time, but this produces only 8 tons or so of lime, the remaining 11 tons being lost in the process, although the chalk blocks do not seem to shrink much. The carbonic gas is all burnt out leaving pure lime, with its proportion of combined silica. The harder the chalk the more the combined silica, and hence we have to obtain ours from the Medway at a good depth; it comes here in barges. The Essex chalk would not suit us, it is too soft and white, and has not enough silica, but the Medway or Kent chalk is close, hard, grey chalk with no flints in it at all. Of course it does not make as white lime as the Essex chalk, but has much greater binding power for mortar in building. The Essex stuff is chiefly used for plastering purposes, for purifying gas, for whiting and for limewash as well as for land. That is for purposes where whiteness or some other quality than strength is required. One has to go very deep in Essex for chalk suitable for builder's mortar. Limestone has even more of combined silica. Whereas the Medway chalk contains $10\frac{3}{4}$ per cent., the Essex chalk has only $1\frac{1}{2}$ per cent."

(*o*) Evidence of Manager of Chalk Quarry at Burham-on-the-Medway, September 29th, 1908.

"Our cutting is nearly 400 feet deep including the 50 feet trial well at the bottom, which we sunk to find the water level merely. As you see, there are only 8 inches of soil above the level of the chalk in some places. Then comes from 50 feet to 70 feet of white chalk, full of the usual flints in layers. Then 50 feet or so of Burr chalk (intermediate between the white and the grey), then about 100 feet of grey chalk suitable for limeburning, building blocks and cement. After that 100 feet or more of a still darker chalk in very thick layers or blocks, sometimes 7 feet thick; we call this 'hydraulic' chalk because, when used in cement, it sets even under the water. No flints whatever are found in the grey, the Burr or the hydraulic layers. Flints are confined to the topmost or white chalk. The fissures are further apart the deeper one goes, hence the enormous blocks you see in the lowest stratum. Ours is one of the deepest pits on the Medway."

(*p*) Evidence of W. Lawrence Gadd, Esq., Chief Experimental Chemist to the Associated Portland Cement Manufacturers, September 25th, 1908.

"Now to answer the important part of your letter. With regard to chalk on land, and the possible presence of ammonia. This gas is produced by the decomposition of nitrogenous organic remains in the soil, and the presence of chalk might tend to fix it as ammonia carbonate, and so prevent its escape into the air, but I do not say that the chalk itself generates ammonia, except that it may keep the soil alkaline (a condition favourable for the production of ammonia from organic matter). You are quite right about the Medway chalk being harder than the

Essex chalk. The former is somewhat hydraulic, this property being imparted by the presence of combined silicates (silicate of aluminium, etc.), and if burnt to lime gives hydraulic lime, which is harder and stronger that ordinary lime, and will to some extent harden under water. Certain cements consist of rather complicated silicates of alumina and lime, so that the presence of some of these silicates ready formed by Nature in grey chalk is a kind of first step from chalk to cement. Essex white chalk is nearly pure, but its silica is what we designate 'free.' It has plenty, but in the form of flints. Now as the silica of flints is not combined with alumina or anything else it is known as free. On the contrary, the grey chalk having no flints has its silica combined chemically with lime and alumina. Flints have mostly been formed by the deposition of free soluble gelatinous silica around a nucleus consisting of a marine sponge or other lowly marine organism. In fact sponge spicules are frequently found as well as other foreign substances inside the flint nodules. We can even now, at will, by chemical action change the hardest flint into a soft jelly like water glass, and this was its condition before it settled round the sponge. The greater or less quantity of flint nodules at higher or lower depths in a chalk stratum depends on causes quite independent of chemical action. For instance, when the water was still for a long period, no doubt the formation of flint nodules would proceed more extensively than when the water was agitated or broken by waves or currents. Cements containing less than the normal amount of silica are usually very quick setting and not so strong. Those containing more than the normal are slow setting and take long periods of time before they attain their full strength. Cement manufacturers have methods of making the white chalk equal to the grey by chemical combination of that which is lacking. Chalk consists of lime chemically combined with carbon di-oxide (gas). On heating to redness the compound is split up, the gas passing into the air and the lime remaining in the kiln."

(*q*) From *Cassell's Encyclopædia* under article "Flint":—

"No theory of flint formation is altogether satisfactory, but apparently the silica was removed in the first instance from the sea water by the action of living sponges and other organisms, and has subsequently been to some extent aggregated by a purely chemical process of concretion and replacement. It is noticeable that there is less diffused silica in the chalk nearest to the flints, and that the tabular flint occurs in vertical joints as well as along the vertical horizontal beds of the chalk. These facts show aggregation subsequent to the deposition of the chalk."

(*r*) Evidence concerning the formation of fissures in chalk:—

Mr. George Clinch, F.G.S., states that "fissures are probably due to shrinkage of the earth's crust, and consequent displacement of the layers thus formed by lateral and other earth pressure." In this he is supported by Geikie (see *Field Geology*), viz., "Undisturbed horizontal strata covering wide regions are often as regularly jointed as strata which have been folded. In such cases, therefore, we may suppose the jointing most probably resulted from the passage of earth waves

through the rocks, the alternate compression and tension having been sufficient to produce fissuring."

Mr. Richard D. Batchelor, the well-known artesian well borer, writes, May 22nd, 1908 :—"The chalk is a porous formation, and is practically saturated throughout as a sponge, although almost imperceptible, and when charged in this way water filters through into the fissures and from thence into the well, often into a rivulet or stream. The fissures are, of course, open, and the larger number of them appear in the upper chalk. They are frequently charged with Thanet sand, and sometimes extend for a considerable distance, they are usually in horizontal bedding and further apart in the lower chalk. Touching the supply of water we find the very same bed existing in another form, only a short distance apart. Thus in one case a small boring might give you all the water you require, while perhaps in the other case large underground works are necessary to form reservoirs (the percolation being so slow). The technical term for 'slitting' is 'fault' or 'fissure.'"

(*s*) Evidence of Mr. R. H. Forster, M.A., May 7th, 1908 :—

"As my brother is a mining engineer of quite the first rank, I should think his opinion should be enough to convince most people. The evidence which has recently come to light proves that the Chislehurst mines (or at any rate one of them) are of even less antiquity than we estimated. The whole tangle arose from two assumptions. First, that they were mysterious; second, that they were labyrinthine. They are neither. It seems to me that there is not a scrap of evidence of their ever having been anything but chalk-mines, though in date they may cover a considerable period. I should like to know if the deneholes at Purfleet are on what was anciently part of the waste of the Manor. Those at Hangman's Wood certainly are. In the north of England there are traces of customs allowing the tenants in a manor to dig coal from under the waste in the manor, and I should not be surprised if something of the same sort existed in Essex with regard to chalk."

(*t*) Evidences of modern chalk-mines, by J. W. Hayes :—

"I have seen, not far from Woolwich, three chalk-mines myself in course of excavation, and the two largest bore a marked resemblance to the Chislehurst 'caves.' In one of them the lessee was bound not to widen the passages beyond 8 or 10 feet, and not to run any new gallery nearer than 25 feet to its neighbours. Thus huge square pillars of chalk are left to support the mass of earth overhead. The average height of these galleries is about 25 feet, but several are 40 feet high with arched roofs, and a few are from 150 to 200 feet long. The excavated material is used in brickmaking and is all brought to the surface by means of a shaft and windlass. To increase the size of the chambers the floor now is taken up in sections. This is called 'bottoming.' In the mine alluded to the galleries are far higher, longer, and better finished than some of those at Chislehurst, and remind one of a lofty cathedral aisle. Dr. E. Baker, Mr. A. L. Leach, Mr. F. W. Reader

and others have likewise seen them. The picks used are of three varieties, *i.e.*, the usual double shouldered one, the single shouldered one, and a dressing pick with blunt broad blade. The flints in this mine are, comparatively speaking, very few, and sometimes a band of harder chalk 2 or 3 feet thick is found running through the softer chalk. The same phenomenon is observed at Aiskew Quarry, Grays, where, about 50 feet down in the white chalk, a seam of harder chalk free from flints runs around the whole quarry. This hard band would, of course, make better lime, and be much sought after for the purpose. In 1707 the Bricklayers' Company of London burnt chalk into lime at Purfleet."

(*u*) Evidence of Mr. T. V. Holmes, F.G.S., in the *Geological Magazine*, October, 1898, article "On deneholes and bell pits," p. 458:—

"It is worth adding that no attempt has been made to extract flint from a prominent band seen in each pit at Hangman's Wood 4 to 6 feet above the floor, or from any other band." Page 457: "The shafts of these groups of deneholes are extremely narrow. In some cases at Hangman's Wood we found them in places with a diameter still under 3 feet, and with the footholes at the side so little obliterated that Mr. Miller Christy ascended and descended (several feet in the Thanet sand) part of one shaft by their aid. When in use the shaft throughout must have been somewhat narrower than the narrowest part of a shaft to-day." Page 452: "The pits at Hangman's Wood are about 80 feet deep, the lowest 22 feet or thereabouts being chalk. Those at Stankey Wood and Cavey Spring average from 20 to 30 feet less. The Bexley ones are also smaller in size (judging from those we entered), averaging from 40 to 50 feet in length, while at Hangman's Wood they are 70 feet long and about 18 feet high. The height of the Bexley pits is less. The thickness of the chalk roof varies from 2 to 5 feet." In the "Report," p. 235, and onwards, we read: "The floor always has been found to be quite smooth and nearly horizontal. We have found the marks of metal picks to be equally common in the open and closed pits, their abundance and even distribution showing that these deneholes certainly owe their present forms, and in all probability their origin, to users of metal tools. In most of the pits, especially towards the roof, the pick marks look very fresh. Around many are still sticking small patches of moist chalk which, clinging to the picks, had been cast off as the blows were delivered, and had thus bespattered the walls of the chambers." (In taking casts of pick marks care should be exercised so as not to mistake, as some have done, the scoring made by a scrap of flint adhering to the pick for the striation of deer-horn tools, and so set up a false antiquity for the excavation.)

(*v*) Evidence of F. W. Elliott, Esq., *Essex Nat.*, 7, p. 224:—

At Burnham Beeches, Buckinghamshire, having visited a tile yard, he observes: "The tile yard was situated on the slope of a hill which had been cut away to quarry soil for the purposes of the trade. In the level space thus formed were five or six shafts, 4 to 6 feet in diameter, and lined with brick. Over one of

the shafts a windlass was fixed. The others were deserted and overgrown with brambles, etc., but otherwise uncovered. I could not get down any of the shafts as the tackle had been removed when work had been suspended some weeks previously in consequence of a sufficient stock of chalk having been accumulated."

(*w*) Evidence of E. T. Newton, Esq., F.G.S., "Report," p. 257–8 :—

"Among the numerous bones which have been collected by the explorers I have been able to identify the following: human bones, with those of horse or sheep, pig, goat, dog, fox, cat, badger, polecat, weasel, rabbit, hare, indications of one or two birds, and parts of a toad. The only skull found is very imperfect, and the limb bones do not seem to be small enough for the *bos longifrons*. It is somewhat strange that up to the present time the deneholes have yielded no remains which indicate great antiquity, indeed all those characteristic forms which are usually met with in prehistoric deposits are conspicuous by their absence. Even if the *bos primigenius*, Irish elk and reindeer were extinct in this region before the deneholes were made (or at least before they were abandoned), one would expect to find the remains of brown bear, wolf, *bos longifrons*, roe deer or red deer. The wolf we know existed in some abundance in this country at the time of the Norman Conquest, and was not exterminated for some two or three centuries afterwards."

(*x*) Evidence of F. J. Bennett, Esq., F.G.S., 1887 :—

"Wells sunk for extracting chalk and burning it into lime are carried out in rather a different way from those for chalking land. They are often sunk to a depth of 60 feet in the chalk with flints, and then headings are driven at the bottom of the shaft. When used up another is made near, and the digging from the new pit is used to fill up the mouth of the old one, according to Luke Lowsley, Esq., of the Manor House, Hampstead Morris, Berkshire."

(*y*) Evidence of very deep shafts :—

"Mr. T. V. Holmes, F.G.S., in *Recent Geological Information about Blackheath*, 1907, mentions one 123 feet 3 inches, another 119 feet 9 inches, another 140 feet, and 4 feet in diameter, at the base of which was a chamber in the chalk, the extreme dimensions of which were 40 by 63 feet, and the height 9½. The lowest 22 feet of the shaft were cut through the chalk and it was lined throughout with courses of brick and chalk." Mr. A. L. Leach, in *Excursion to Wickham and Bostal Heath*, 1906, mentions that "the brickyards, four in number, obtain chalk by shafts 120 feet, 80 feet, and 150 feet deep. Below Gregory's Brickyard the aggregate length of the galleries is stated to be at least two miles. This mine was opened fifty years ago. A denehole discovered in the Cemetery Brickfield a few years ago ran down 50 feet through tertiaries and chalk, branching out in three small tunnels, but these ran out only a few yards from the shaft."

(*z*) Evidence of lime-burning in former times:—

Muilman, writing in 1769, says about Stifford, viz.: "From the chalk-pits in this and the neighbouring parishes very considerable trade has been carried on by several lime-kilns even to the extent of thirty miles and upwards for many years past, likewise by the farmers for manuring the land. The Kentish chalk, however is preferred for the land, as it dissolves and mellows the land better. In Chadwell are several great chalk wells [Hangman's Wood, undoubtedly] from which chalk was originally dug. Camden mentions them, so does Dr. Derham." In Gray's Quarries may yet be seen two or three old circular lime-kilns and a very interesting one at the "Dell," Grays. Mr. J. Kemp-Smith of Manor Office, Orsett, writes thus: "I have discovered in an old map of Stifford, 1762, that the field opposite the 'Dog and Partridge' Inn is called the kiln field."

Additional Notes.

Old Mr. Privit, a chalk-worker at Messrs. Brooks' quarries, tells me that "the deeper they go the stronger the chalk is," and where blocks are used for building "while they are being sun-dried we must be very careful not to let them get wet, or else if frost comes they would split into fragments. They have to be covered." Benton tells us that large quantities of chalk were used in the construction of ledgings upon the mud at the north of the Thames, such constructions being utilised for breeding oysters. In 1626 the Earl of Essex executed a deed wherein John Buck of London engaged to recover Canvey Island, and from time to time immense quantities of chalk were used on the sea wall there. Again, as late as 1872, in a breach at Foulness costing £20,000 to repair, no less than 6,000 tons of chalk were used. In the *Victoria History of Herts*, 1908, mention is made that shafts of old chalk pits are often filled, at least partially, across the mouth with brushwood and left to themselves, when, in course of time, the roots of trees growing around the edge intertwine; and with the dead leaves, etc., form a sort of cover for the hole, indicated afterwards by a circular depression called a "dell." The same fact is noted by Mr. Roach Smith, Mr. W. T. Vincent, and others. Many of these circular depressions or dells can be seen in Swanscombe, Bexley, Abbey Wood, and Hangman's Wood.

Dr. Henry Laver (President of the Essex Archæological Society), in a letter to me on the use of chalk, remarks:—

"With regard to chalking land the object is two-fold. Our clays have not enough lime in them, and what they have is a sulphate, and a dressing of chalk does good for twenty years or more. It is important that the chalk should become powdered by frosts. Then chalk is beneficial on clays mechanically. It makes the clay work better and opens it. Again, there is no question that it has a beneficial effect with regard to nitrogen, and, chemically, it removes the acids of the clays and in the words of the farmers does away with the sourness of the soil. In some

farms on Foulness Island the only manure needed is chalk. Flints from the chalk have been used for arrow-beads and for the old-fashioned flint-locks, but as the surface flints (of the gravel) or the layers of flint nearest the surface in the chalk are more brittle and strike fire better than those found at a low level, any excavations made for them are shallow and irregular in shape; they must not be confounded with deneholes."

In *Man*, art. 92 (1908), Mr. W. Allen Sturge gives an interview with Canon Greenwell concerning the finding of seventy-two antlers of the red deer in the excavations known as Grimes Graves; these were used as primitive picks in pits which are far removed in shape from deneholes and where the object was undoubtedly to secure flints, not chalk.

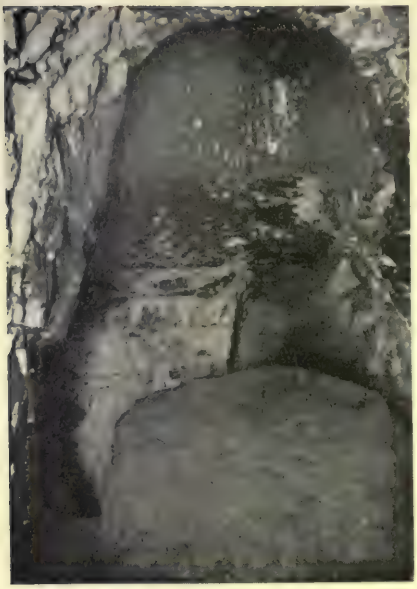


FIG. 1.—HANGMAN'S WOOD.
Denehole 11 : Showing rope-marks and fallen débris.



FIG. 2.—HANGMAN'S WOOD.
Denehole 5 : Pick-marks in South Chamber.



FIG. 3.—HANGMAN'S WOOD.
Denehole 11 : view from S.S.E.



FIG. 4.—HANGMAN'S WOOD.
Denehole 5 : Chamber 22 feet high.

Photographs by S. Hazzledine Warren, Esq.

CLASSIFICATORY SYSTEMS OF RELATIONSHIP.

By A. L. Kroeber.

The distinction between classificatory and descriptive systems of relationship has been widely accepted, and has found its way into handbooks and general literature. According to the prevalent belief the systems of certain nations or languages group together distinct relationships and call them by one name, and are therefore classifying. Other systems of consanguinity are said to indicate secondary differences of relationship by descriptive epithets added to their primary terms, and to be therefore descriptive.

Nothing can be more fallacious than this common view. A moment's reflection is sufficient to show that every language groups together under single designations many distinct degrees and kinds of relationship. Our word brother includes both the older and the younger brother and the brother of a man and of a woman. It therefore embraces or classifies four relationships. The English word cousin denotes both men and women cousins; cousins on the father's or on the mother's side; cousins descended from the parent's brother or the parent's sister; cousins respectively older or younger than one's self, or whose parents are respectively older or younger than the speaker's parents; and cousins of men or women. Thirty-two different relationships are therefore denoted by this one English word. If the term is not strictly limited to the significance of first cousin, the number of distinct ideas that it is capable of expressing is many times thirty-two. Since then it is not only primitive people that classify or fail to distinguish relationships, the suspicion is justified that the current distinction between the two classes or systems of indicating relationship is subjective, and has its origin in the point of view of investigators, who, on approaching foreign languages, have been impressed with their failure to discriminate certain relationships between which the languages of civilized Europe distinguish, and who, in the enthusiasm of formulating general theories from such facts, have forgotten that their own languages are filled with entirely analogous groupings or classifications which custom has made so familiar and natural that they are not felt as such.

The total number of different relationships which can be distinguished is very large, and reaches at least many hundred. No language possesses different terms for all of these or even for any considerable proportion of them. In one sense it is obvious that a language must be more classificatory as the number of its terms of relationship is smaller. The number of theoretically possible relationships

one term in pro-
nderstanding of
remaining constant, there must be more ideas grouped und twenty terms of
portion as the number of terms is less. Following the accept languages of all
what constitutes classificatory consanguinity, English, with ore terms.
relationship, must be not less but more classificatory than is to have any
primitive people who happen to possess twenty-five, thirty, or e single fact that

It is clear that if the phrase classificatory consanguinit our language
meaning it must be sought in some more discriminating way. Th neral and
another people group together various relationships which d and
distinguishes does not make their system classificatory. If there is a g the
fundamental difference between the systems of relationship of civilize
uncivilized people, its basis must be looked for in something more exact than
rough and ready expressions of subjective point of view that have been customary.

It is apparent that what we should try to deal with is not the hundreds or thousands of slightly varying relationships that are expressed or can be expressed by the various languages of man, but the principles or categories of relationship which underlie these. Eight such categories are discernible.

1. *The difference between persons of the same and of separate generations.*—The distinctions between father and grandfather, between uncle and cousin, and between a person and his father, involve the recognition of this category.

2. *The difference between lineal and collateral relationship.*—When the father and the father's brother are distinguished, this category is operative. When only one term is employed for brother and cousin, it is inoperative.

3. *Difference of age within one generation.*—The frequent distinction between the older and the younger brother is an instance. In English this category is not operative.

4. *The sex of the relative.*—This distinction is carried out so consistently by English, the one exception being the foreign word cousin, that the discrimination is likely to appear self-evident. By many people, however, many relationships are not distinguished for sex. Grandfather and grandmother, brother-in-law and sister-in-law, father-in-law and mother-in-law, and even such close relationships as son and daughter, are expressed respectively by single words.

5. *The sex of the speaker.*—Unrepresented in English and most European languages, this category is well known to be of importance in many other languages. The father, mother, brother, sister, and more distant relatives may receive one designation from a man and another from his sister.

6. *The sex of the person through whom relationship exists.*—English does not express this category. In consequence we frequently find it necessary to explain whether an uncle is a father's or a mother's brother, and whether a grandmother is paternal or maternal.

7. *The distinction of blood relatives from connections by marriage.*—While this distinction is commonly expressed by most languages, there are occasional lapses; just as in familiar English speech the father-in-law is often spoken of as father. Not strictly within the domain of relationship, but analogous to the occasional

failure to express this category, is the frequent ignoring on the part of primitive people of the difference between actual relatives and fictitious clan or tribal relatives.

8. *The condition of life of the person through whom relationship exists.*—The relationship may be either of blood or by marriage; the person serving as the bond of relationship may be alive or dead, married or no longer married. Many North American Indians refrain from using such terms as father-in-law and mother-in-law after the wife's death or separation. Some go so far as to possess terms restricted to such severed relationship. It is natural that the uncle's relation to his orphaned nephew should tend to be somewhat different from his relation to the same boy while his natural protector, his father, was living. Distinct terms are therefore sometimes found for relatives of the uncle and aunt group after the death of a parent.

The subjoined table indicates the representation of the eight categories, and the degree to which they find expression, respectively in English and in several of the Indian languages of North America.

		N.A. Indian.					California Indian.						
	English.	Arapaho.	Dakota.	Pawnee.	Skokomish.	Chinook.	Yuki.	Pomo.	Washo.	Miwok.	Yokuts.	Luiseño.	Mohave.
No. of terms	21[1]	20	31	19	18	28	24	27	28	24	28	34	35
Generation	21	20	31	11	13	23	24	21	27	24	22	30	26
Blood or marriage	21	19	31	17	18	26	24	27	28	24	28	32	34
Lineal or collateral	21	10	20	5	11	25	24	21	28	18	26	34	28
Sex of relative	20	18	29	17	2	12	16	21	20	20	17	18	22
Sex of connecting relative ...	0	6	6	2	0	20	13	13	14	10	14	19	21
Sex of speaker	0	3	18	4	0	15	3	3	10	2	12	10	14
Age in generation	0	3	7	2	2	2	3	4	4	4	4	12	8
Condition of connecting relative	0	0	0	0	8	1	0	0	0	0	[2]	0	1

It appears that English gives expression to only four categories. With the exception, however, of the one and foreign word cousin, every term in English involves the recognition of each of these four categories. All the Indian languages express from six to eight categories. Almost all of them recognize

[1] All terms are omitted, such as great grandfather, great-uncle, and second-cousin, which are not generally used in ordinary speech and exist principally as a reserve available for specific discrimination on occasion.

[2] Terms denoting relatives by marriage undergo a vocalic change to indicate the death of the connecting relative.

seven. But in all the Indian languages the majority of the categories occurring are expressed in only part of the terms of relationship found in the language. There are even Indian languages, such as Pawnee and Mohave, in which not a single one of the seven or eight categories finds expression in every term. While in English the degree of recognition which is accorded the represented categories is indicable by a percentage of 100 in all cases but one, when it is 95, in Pawnee corresponding percentages range variously from about 10 to 90, and in Mohave from 5 to 95. All the other Indian languages, as compared with English, closely approach the condition of Pawnee and Mohave.

It is clear that this difference is real and fundamental. English is simple, consistent, and, so far as it goes, complete. The Indian systems of relationship all start from a more elaborate basis, but carry out their scheme less completely. This is inevitable from the fact that the total number of terms of relationship employed by them is approximately the same as in English. The addition of only one category to those found in English normally doubles the number of terms required to give full expression to the system; and the presence of three additional categories multiplies the possible total by about eight. As the number of terms occurring in any of the Indian languages under consideration is not much more than half greater than in English, and sometimes is not greater at all, it is clear that at least some of their categories must find only very partial expression.

In short, as far as the expression of possible categories is concerned, English is less complete than any of the Indian languages; but as regards the giving of expression to the categories which it recognizes, English is more complete. In potentiality, the English scheme is poorer and simpler; but from its own point of view it is both more complete and more consistent. As English may evidently be taken as representative of European languages, it is in this point that the real difference is to be found between the systems that have been called classificatory and those that have been called descriptive.

The so-called descriptive systems express a small number of categories of relationship completely; the wrongly-named classificatory systems express a larger number of categories with less regularity. Judged from its own point of view, English is the less classificatory; looked at from the Indian point of view it is the more classificatory, inasmuch as in every one of its terms it fails to recognize certain distinctions often made in other languages; regarded from a general and comparative point of view, neither system is more or less classificatory.

In short, the prevalent idea of the classificatory system breaks down entirely under analysis. And in so far as there is a fundamental difference between the languages of European and of less civilized peoples in the method of denoting relationship, the difference can be determined only on the basis of the categories described and can be best expressed in terms of the categories.[1]

[1] A tendency toward reciprocal expression is sometimes of importance and may influence the degree to which categories are given expression. Reciprocal terms are such that all the persons included in the relationship expressed by one term call by one name all the persons

The categories serve also to indicate the leading characteristics of systems of the same general order. It is obvious, for instance, that the most important difference between Dakota and Arapaho is the strong tendency of the former to recognize the sex of the speaker. Chinook is notable for laying more stress on the sex of the speaker and of the connecting relation than on the sex of the relative.[1] General differences such as naturally occur between the languages of one region and of another can also be expressed in terms of the categories. All the California systems, for instance, lay much more stress upon the sex of the connecting relative than do any of the Plains languages examined. The Plains systems are conspicuous for their weak development of the distinction between lineal and collateral relationship, this finding expression in two-thirds of all cases in Dakota, half in Arapaho, one-fourth in Pawnee. In seven California languages the corresponding values lie between three-fourths and complete expression. The method can be applied successfully even in the case of smaller and contiguous geographical areas. Of the seven California languages Luiseño and Mohave are spoken in southern California. Their systems show a unity as compared with the systems of the five languages from northern and central California. Both the southern California languages have a greater number of terms; both are stronger in the expression of the categories of the sex of the connecting relative and of age within the same generation; and both are weaker in the category of sex of the relative, than the others. Again, Chinook and Skokomish, both of the North Pacific Coast, are alike in indicating the condition of the connecting relative and in failing, on account of the possession of grammatical sex gender, to distinguish the sex of relatives themselves in many terms of relationship. There is a very deep-going difference between them, however, in the fact that Skokomish

who apply this term to them. In the most extreme form of reciprocity the two groups of relatives use the same term. The paternal grandparents call their sons' children, whether boys or girls, by the same term which these children, both boys and girls, apply to their fathers' parents. Nevertheless, the reciprocal relation is just as clear, though less strikingly expressed, when each of the groups uses a different term for the other. Our English words father and child, or brother and sister, are not reciprocal, for the term child is employed also by the mother, and brother is used by the brother as well as by the sister. In fact the only reciprocal term in English is cousin. The tendency toward reciprocal expression is developed in many Indian languages. It is particularly strong in California. In some languages this tendency has brought it about that different categories are involved in the terms applied to a pair of mutual relationships. The term father's sister indicates the sex of the relative but not of the speaker. The exact reciprocal of father's sister is woman's brother's child. This term, however, does not recognize the sex of the relative indicated, but does imply the sex of the speaker. The two reciprocal terms therefore each involve a category which the other does not express. If the same categories were represented in the two terms, brother's daughter would correspond to father's sister and exact reciprocity would be impossible. When, therefore, the terms found are father's sister and woman's brother's child, it is clear that the tendency toward the establishment of exactly reciprocal terms has been stronger than the feeling favoring the consistent use or neglect of certain categories; in other words, the extent to which certain categories are expressed has been determined by the vigor of the reciprocal tendency.

[1] No doubt, as has been pointed out, owing to the fact that the sex of the relative is indicable by purely grammatical means in this and certain other languages.

is as free as English from recognizing the sex of the speaker and of connecting relatives, while Chinook generally expresses both categories. In short, the categories present a means of comparing systems of terms of relationship along the basic lines of their structure and of expressing their similarities and differences without reference to individual terms or details.

The reason why the vague and unsatisfactory idea of a classificatory system of consanguinity has found such wide acceptance is not to be sought in any primary interest in designations of relationship as such, but in the fact that terms of relationship have usually been regarded principally as material from which conclusions as to the organization of society and conditions of marriage could be inferred. If it had been more clearly recognized that terms of relationship are determined primarily by linguistic factors, and are only occasionally, and then indirectly, affected by social circumstances, it would probably long ago have been generally realized that the difference between descriptive and classificatory systems is subjective and superficial. Nothing is more precarious than the common method of deducing the recent existence of social or marital institutions from a designation of relationship. Even when the social condition agrees perfectly with expressions of relationship, it is unsafe to conclude without corroborative evidence that these expressions are a direct reflection or result of the condition.

In the Dakota language, according to Riggs, there is only one word for grandfather and father-in-law. Following the mode of reasoning sometimes employed, it might be deduced from this that these two relationships were once identical. Worked out to its implications, the absurd conclusion would be that marriage with the mother was once customary among the Sioux.

In the same language the words for woman's male cousin and for woman's brother-in-law have the same radical, differing only in a suffix. Similar reasoning would induce in this case that marriage of cousins was or had been the rule among the Sioux, a social condition utterly opposed to the basic principles of almost all Indian society.

The use of such identical or similar terms for distinct relationships is due to a considerable similarity between the relationships. A woman's male cousin and her brother-in-law are alike in sex, are both of opposite sex from the speaker, are of the same generation as herself, and are both collateral, so that they are similar under four categories. In view of the comparative paucity of terms as compared with possible relationships, it is entirely natural that the same word, or the same stem, should at times be used to denote two relationships having as much in common as these two.

No one would assume that the colloquial habit in modern English of speaking of the brother-in-law as brother implies anything as to form of marriage, for logically the use of the term could only be an indication of sister marriage. It is easily conceivable that in the future development of English the more cumbersome of these two terms might come into complete disuse in daily life and the shorter take its place, without the least change in social or marital conditions.

The causes which determine the formation, choice, and similarities of terms of relationship are primarily linguistic. Whenever it is desired to regard terms of relationship as due to sociological causes and as indicative of social conditions, the burden of proof must be entirely with the propounder of such views.

Even the circumstances that the father's brother is frequently called father is not necessarily due to or connected with the custom of the Levirate; nor can group marriage be inferred from the circumstance that there is frequently no other term for mother's sister than mother. A woman and her sister are more alike than a woman and her brother, but the difference is conceptual, in other words linguistic, as well as sociological. It is true that a woman's sister can take her place in innumerable functions and relations in which a brother cannot; and yet a woman and her sister, being of the same sex, agree in one more category of relationship than the same woman and her brother, and are therefore more similar in relationship and more naturally denoted by the same term. There are so many cases where the expression of relationship cannot have been determined by sociological factors and must be purely psychological, as in the instances just discussed, that it is fair to require that the preference be given to the psychological cause, or that this be admitted as of at least equal probability, even in cases where either explanation is theoretically possible and supporting evidence is absent.

On the whole it is inherently very unlikely in any particular case that the use of identical terms for similar relationships can ever be connected with such special customs as the Levirate or group marriage. It is a much more conservative view to hold that such forms of linguistic expression and such conditions are both the outcome of the unalterable fact that certain relationships are more similar to one another than others. On the one hand this fact has led to certain sociological institutions; on the other hand, to psychological recognitions and their expression in language. To connect the institutions and the terms causally can rarely be anything but hazardous. It has been an unfortunate characteristic of the anthropology of recent years to seek in a great measure specific causes for specific events, connection between which can be established only through evidence that is subjectively selected. On wider knowledge and freedom from motive it is becoming increasingly apparent that causal explanations of detached anthropological phenomena can be but rarely found in other detached phenomena, and that it is even difficult to specify the most general tendencies that actuate the forms taken by culture, as the immediate causes of particular phenomena.

The following conclusions may be drawn:—

1. The generally accepted distinction between descriptive and classificatory systems of terms of relationship cannot be supported.
2. Systems of terms of relationship can be properly compared through an examination of the categories of relationship which they involve and of the degree to which they give expression to these categories.
3. The fundamental difference between systems of terms of relationship

of Europeans and of American Indians is that the former express a smaller number of categories of relationship than the latter and express them more completely.

4. Terms of relationship reflect psychology, not sociology. They are determined primarily by language and can be utilized for sociological inferences only with extreme caution.

SOME MONTENEGRIN MANNERS AND CUSTOMS.

By M. Edith Durham.

[With Plate XII.]

The great Servian Empire of the middle ages, which included the whole of Servia, Macedonia, Bosnia, the Herzegovina, Albania and Montenegro and held Bulgaria and Thessaly as vassal States, had a fatally weak point in its construction; the peoples of which it was compounded were all in the tribal state of a nation's history. It was a huge unwieldy mass of rival clans each led by its own chieftain. Only a very strong man could drive this mixed team on the curb, and Stefan Dushan, the Napoleon of the Near East, was the strong man.

Had he lived to consolidate his work it is possible that the fate of the South Slavs would have been very different, and the Serbs might have been the predominant race in the peninsula. He planned to seize Byzantium and to keep the Turks from Europe. But he died in 1356, in the height of his fame and power, when on the march with a great army which he had raised for the purpose. His only son was too young to succeed him, and the Great Serb Empire was speedily torn to pieces by rival chieftains, and finally shattered by the Turks at Kosovo in 1389.

The men of the plains had to succumb. The mountain men of the west side of the peninsula, both Slav and Albanian, took to the heights and defended themselves. The handful that belonged to the Servian Orthodox Church and took to the mountains that are now known as Montenegro were the ancestors of the present Montenegrin tribes. Isolated from the world and occupied mainly by fighting (for the whole of the five centuries that followed were a long struggle for independence), they clung fast to their national customs, and we thus have the curious example of a community constructed on quite primitive lines at the beginning of the fifteenth century, and surviving to be recognised as a nation by the Powers at Berlin in 1877.

That they did so survive, the Montenegrins owe to the fact that, in a lucky and inspired moment, they chose the head of their church as the national leader. No temporal power has as yet succeeded in welding the South Slavs together for long. But the spiritual power of the Prince-Bishops of Montenegro seems to have had a quite extraordinary influence on the superstitious people. The Vladika was regarded as God's vice-regent and his curse dreaded above all things. The Prince-Bishop was celibate and chose and educated his successor from among his brothers' sons. In this way a remarkably capable series of rulers was produced, and the nation built up.

Till 1877 they had led an extraordinarily primitive life. They were suddenly called on to leap at one bound into the nineteenth century.

Montenegro is now changing rapidly. Too rapidly. Modern and Western ideas are poured into mediæval minds that are totally unable to assimilate them. The vices of what is called civilization are easier to learn than its virtues. Emigrants are now returning often horribly debauched from America. America just now is the Eldorado of the Balkan man, and has a most fatal effect upon him. And the outlook is bad.

But the tide of change is not yet thirty years old. Up country things have as yet changed very little. The older generation for the most part can neither read nor write; has marvellous memories, and stores of oral tradition.

I do not want merely to give a string of such customs as I have picked up. Many of them would not be new to you. I want to make you see the living soul of a primitive people. To look on the world through their eyes. I will give the plot of a ballad, a tale which I heard on the actual spot. The event took place in the eighteenth century, but is still fresh in the mind of the people. It is one of a vast number of similar ballads that come up to modern times, and gives a good idea of life up to thirty years ago.

The Avenging of Batrich Perovich.

Plot of the Ballad.

Batrich Perovich of the Montenegrin clan of Cuce has sworn brotherhood with a Moslem, Osman Chorovich, who betrays and kills him. His old father Pero is in despair, but his brother Radule and his men go to seek blood vengeance. They kill thirty, and in the end slay Osman. The vengeance being now complete they return home, and the old father cries, "So nobly hast thou avenged my Batrich, it is as though thou hadst brought him back with thee!"

In this way the whole history of the people has been handed down from the middle ages. Every village almost has its hero and sings of him. The nights that I have spent round a fire listening to the monotonous minor chant, are nights I can never forget. The buzzing twangle-wangle of the one-stringed *gusle* (Plate XII, Fig. 3); the growing excitement of the singer, whose voice rises to a hoarse roar, the veins of his throat stand up in cords; the sweat pours off him. He kills his last Turk with a yell and flings the *gusle* on to the next man, quite worn out by the emotions he has lived through.

The opening of this particular ballad is a stock ballad opening occurring often.

The white fairy or *vila* is the mountain spirit of the Servians. Vilas undoubtedly existed a long while ago, I have been frequently told. The invention of guns frightened them and they took to the huge underground caverns that are common in Montenegro. "This is where the *vilas* used to live," I have often been told. *Vilas* were extremely capricious, often very useful and friendly and at other times unreliable. The celebrated hero Kraljevich Marko, who flourished in the fifteenth century, was sworn brother to a *vila* who frequently saved him from

enemies by sending down a mountain mist. *Vilas* also were in the habit till recently of warning the Montenegrins of the approach of the Turks. *Vilas* were extremely beautiful and "beautiful as a *vila*" is the usual expression of to-day. They could also be very spiteful. A *vila* would amuse herself by appearing as a beautiful maiden and inducing two young men to fight about her. When one or both were mortally wounded, the *vila* laughed and flew away. They were also very jealous and often slew very handsome youths to prevent them from marrying mortal maidens.

The serpent one also hears of often. There seems a pretty general belief in a large serpent of some kind that lurks in recesses in the mountains and is of vast size. At one place I was told it was impossible to swim across a certain lake, because when a man got to the middle he was certain to throw up his arms and sink. The serpent of the lake dragged him down. My usual guide has a decided belief in serpents. He shuffles out of it if you put it straight to him. But a few days after a serpent crops up again as a possible explanation of a stream having run dry or something of that sort.

"Has the falcon swooped upon a bird?" The falcon, too, played a considerable part in Montenegrin affairs, the *sivi soko*, the grey falcon. Every Montenegrin is a *sivo soko*. I am, too, when I do anything that is considered brave. The falcon carries messages in the old ballads. The raven always brings bad news. In another version of this ballad which I picked up, the news of Batrich's death is brought by ravens to his mother, who sends out Radule.

Batrich is a member of the Cuce (Tsutse) tribe. When the events narrated occurred, this was a frontier tribe (Montenegrin territory has since been considerably extended on that side). The neighbouring tribes of Grahova and Baniani were then still under Turkish dominion. Cuce and Bijelice had already migrated out of the Herzegovina, then Turkish, and had been settled by the Vladika Petar I on Montenegrin soil.

There are now between forty and fifty tribes in Montenegro. They have each a distinct tradition as to their origin. As an example, take that of the clan I have lived with most, Njegushi.

Njegushi takes its names from Njegush, a mountain of the Herzegovina (included now by the Treaty of Berlin in modern Montenegro). The western side of Montenegro is largely composed of tribes which shifted out of the Herzegovina into the more inaccessible Montenegrin mountains. The tribe Njegushi traces its origin thus. A man called Punosh came first, presumably with his family and belongings and settled at Dugi do (*lit.* the long valley, a valley which now lies deep below the carriage road leading to Cetinje); Punosh is reputed to have come in the fifteenth century; dates are vague. From him spring all the present inhabitants of Dugi do. It consists now of about sixty houses, seven or eight of which are still Punoshoviches. The others, though they have differentiated into family groups with different names, all trace descent from Punosh. My guide, Krsto Pejovich, belongs to Dugi do, and on the 9th of March last year (1907) I was there

on Zadushnja Subota (All Souls' Saturday). We made tapers by [illegible] beswax round cotton cord, and stuck a lot of them all round the edge of the *sofra*, the little round table. On the table was boiled wheat (*panhardija*), and wine. He then censed the *ikon* (there is of course an *ikon* in every house), lit all the candles, prayed and then poured the wine on the wheat.

I then went to church with all the men of Dugi do. Dugi do has its own church. Everyone brought wine and boiled wheat or bread. We burnt quantities of tapers. Then, after a mass, Pop Gjuro, the priest (Plate XII, Fig. 1), stood at a table facing the Ikonostasis and read the names of the deceased in all the families of Dugi do since the tribe began. These were handed him in little books or folded parchments. We began at Punosh and it was a long job; of course we ate wheat for their souls. The lists were mere strings of Christian names and no genealogies could be traced on any that I saw. Only quite recently did any women's names occur in these lists. Some of the Punosh lot live in Kopita, another small village of clan Njegushi. The bulk are at Dugi do.

Next after Punosh, quite soon after, also in the fifteenth century, came two brothers, also from the same place as Punosh. What relation they were to him I do not know. These brothers were called Jerak and Raich. From these we get the two largest groups of the tribe, the Jerakoviches and the Raichoviches.

These again are subdivided into many family groups or *Bratstvos*. The present Prince's family, the Petroviches, belongs to the Jerakoviches. That some of these groups or *bratstvos* must have been both pious and wealthy is shown by the fact that though the whole tribe is vaguely reckoned at between four and five hundred houses, it possesses no less than seventeen churches, two of which stand side by side.

Last of all to settle was *Vrba* (literally willow), the village of Vrbica being the first large group of houses you come to on entering Montenegro.

There are four other tiny villages scattered on the mountains which also belong to one or other of the above mentioned groups and that is the whole *pleme*. It is an extremely proud *pleme*, for it not only contains the Royal family, but it is the only one that can boast that no Turkish army has ever penetrated its territory. It owns the large mountain, the Lovčen, and has a large plain in its midst, but all the old settlements are on the sides of the mountains surrounding the plain. I was told that this is because when the first settlers chose their sites the plain was full of water, but that it burst through underground and all ran away. This is an interesting tradition as the plain is an undoubted lake bed. I do not know of a lake being marked on any early map, but it is not likely the people could have invented the tale.

A man may marry within his *pleme* but not within his *bratstvo*. The *bratstvo* in old days consisted of cousins to the *nth* degree, but in the nature of things it became necessary in time to subdivide large *bratstvos* in inter-marriageable groups.

At the present day in Montenegro the *bratstvo* does not go beyond third cousins who may marry. But the feeling against marrying one's blood, as it is

called, is still very strong, and the *bratstvo* of Drekalovich in the Kuchi *pleme* boasts that it has never yet married a drop of its own blood. It consists of about a hundred houses, and has only just now been divided into inter-marriageable groups. The *bratstvo* held together very strongly. In case of the murder of one member the whole *bratstvo* flew to arms. The ballad of Batrich illustrates this. In such a case as Batrich's, the feud would very likely last for years, or even generations, Chorovich's family being Moslems and enemies. Should, however, a case of blood vengeance occur between two *bratstvos* in the same *pleme*, the heads of the *pleme* intervened speedily to prevent the loss of the fighting men of the tribe; several had generally been killed or wounded. The two *bratstvos* were sworn to keep peace, usually till the next important saint's day. The vow was renewed a second time and also a third time if the parties had not yet become reconciled. When it came to the third time a day was fixed for the judging and settling of the case. Tribe law was called the decree of the good men, *Sud Drobrih ljudi*. The good men were the heads of *bratstvos* and of all the households, the head of the whole clan, and the priest, twenty-four in all. They were summoned by the plaintiff. The defendant had a right to object to any of them. They met always on a Sunday morning outside the church. All the men of each *bratstvo* involved usually appeared. The good men were well versed in all the traditional law. They heard the evidence and estimated the damage. "A head," that is, a dead man, was valued at 120 ducats, I believe about £60. A "blood," that is, a wound, was reckoned at 10 ducats, at most. A dead man thus was equivalent to twelve severe wounds. In this way the account was balanced, a "head" on one side balancing one on the other. Wounds were valued according to severity and a bill made out. The good men wrote and sealed their verdict in some such form as this: "We, the undersigned head men of X, having considered the case of so and so, do unanimously decide . . . here follow the details, and we decree, etc. This on our souls, we find to be the best way of restoring peace according to the customs of our land and the most honourable, and who differs from us is no brother of ours." The sentence included in such a case not only the fine to be paid, but all the ceremonies to be gone through to ensure reconciliation. In Montenegro, until recent times the word "friend" had not the English meaning. You could not be the friend of a man to whom you were not in some way related. If you were not a friend you were, of course, a possible enemy. It is possibly on this account that blood relationships were traced to such great lengths. It undoubtedly made for peace, and a crowd of imaginary relationships were brought about by marriage, and classed as blood relations. Relationship was and is divided into five classes.

1. The blood of a man's *bratstvo* as above.
2. The blood of his wife's family and that of his brother's wife.
3. The family of his wife's brother's wife.
4. *Kumstvo.*
5. Adopted child. About this latter I know very little. I am told it ranks exactly as own child.

The various relationships are very much more accurately named than in most European languages. For instance, a man's wife's brother is his *šura*. A woman's husband's brother is her *djever*. A man's sister's brother is his *svak*. The husbands of two sisters are each other's *pašanak*. All of which we class together as brother-in-law.

List of Words Used to Denote Various Degrees of Relationship in Montenegro.

Grandfather, *djed*.
Great uncle, also *djed*.
Great grandfather (or uncle), *pradjed*.
Grandmother, *baba*.
Great grandmother, *prababa*.
Father, *otac* (*otatz*).
Mother, *majka*.
Brother, *brat*.
Sister, *sestra*.
Uncle (on father's side), *stric* (pronounce *stritz*).
His wife, *strina*.
Uncle (on mother's side), *ujak* (*uyak*).
His wife, *ujna*.
Aunt (father's sister and mother's sister), *tetka*.
Husband, *muž*.
Wife, *žena* (this is also woman), or *Nevjesta*.
A man's wife's brother is his *šura*.
The *šura's* wife is a man's *šurnjaja*.
A woman's husband's brother is her *djever*.
A woman's sister is her husband's *svast*.
Husband's sister is his wife's *zaova*.
The wives of brothers are each other's *jetrva*.
Husband's mother is his wife's *svekrva*.
Wife's mother is her husband's *punica*, or *tasta* (or *tašta*).
Wife's father is her husband's *tast*.
Brother's wife is a man's (or woman's) *snaha*.
A man's daughter-in-law is also his *snaha*.
A brother's child is *bratanac* or *sinovac* (masc.), *bratanica* or *sinovica* (fem.).
A sister's child is *sestrić* (masc.), *sestrica* or *sestričina* (fem.).
A grandchild is *unuk*.
A man's sister's husband is his *svak* (*zet* is also used but means also son-in-law).
Son-in-law, *zet*.
First cousin, *rodjak* (fem. *rodjaka*), or *bratučed* (lit. brother's child)

Second cousin, *drugi* (2nd) *rodjak* or *bratučed.*

Third cousin, *treci* (3rd) *rodjak*, etc.

Any member of the *bratstvo* (cousins to the n*th* degree) is another's *bratstvenik*, and they all address each other as brother.

A daughter of the house married away into another clan is *odiva.*

A man's wife's child by a previous husband is his *pastorak* (masc.), *pastorka* (fem.).

The husbands of two or more sisters are each other's *pašanak.*

Stepfather, *očuh.*

Stepmother, *maćeha.*

Stepbrother, *polubrat* (*i.e.*, half-brother).

Stepsister, *polusestra.*

Relations Forbidden to Marry.

1. The blood of the family (*bratstvo*).
2. The blood of the wife's family and of the brother's wife's family.
3. The blood of the family of the wife's brother's wife.
4. *Kumstvo.* Ranks as family blood only in direct line of descent. The kum's brother's family is no relation to the god children.
5. Adopted child (this ranks as family blood).

Kumstvo, the remaining forbidden degree to be considered, is best translated as godfatherhood. This is a very binding relationship. The godchild ranks as own child and is therefore not intermarriageable with the godfather's children. Nor are the direct descendants intermarriageable. As all the godchildren of a man are considered each others' brothers and sisters and rank exactly as blood-relations, it is usual to have but one godfather for a whole family or relationships would be frightfully tangled. In reconciling a blood-feud, it was the custom of the good men to order that several children of the guilty *bratstvo*, should have members of the other *bratstvo* as godfathers. Should there be some young unchristened infants all ready they were brought at once, and forthwith christened. It was customary to postpone baptism of a child till thus needed. Blood-relationship was thus established and the parties became allies instead of enemies. A grand feast followed.

If the good men were unable to settle a case satisfactorily, it went before the prince, who was the supreme court of appeal. It is only some eight years ago that the present prince resigned this post. I once saw him on a Sunday morning sitting in front of the church hearing a case. Two men, Turkish subjects, had tramped from across the border to beg his opinion on a blood-feud. I was told that finally he got them to swear reconciliation.

The good men no longer try criminal cases, but the heads of a *pleme* still decide purely tribal business, such as wood-cutting rights and so forth, and mee outside the church.

Many people will still tell you that the good men administered justice in a far better manner than can be done by a modern law court. They knew all the parties concerned, and justice, not merely law, was the result. They used, when they thought fit, to deal with all manner of possible side issues. The Austrians in Bosnia had, at the beginning, more than once to summon the good men to decide cases that the Austrian courts were quite unable to unravel, as they depended upon a mass of local custom.

The next point of interest in the ballad is that Batrich had sworn brotherhood with Osman. *Pobratimstvo*, or sworn brotherhood, was till recently very frequent among the South Slavs. In Montenegro it was sworn in church before a priest, except in the case of a Moslem. Women could swear *posestrimstvo*. I heard a case of this when in Bosnia the year before last. A Servian lady whom I know does a lot of relief work among the poor in outlying villages. One day a woman from one of these villages came down to the town greatly excited and claimed the lady as *posestrima*. "Last night," she said, "I had a most terrible dream. A great serpent came, and was going to devour me. I saw you in my dream and called on you as my sister in God, to save me. And you saved me, and I have come to ask you for *posestrimstvo*." The lady accepted the relationship and the peasants call regularly and recently invited the daughters to a wedding, saying, "You must come to your cousin's wedding." *Pobratimstvo* in Montenegro has not carried blood-relationship, so far as intermarriage is concerned, within living memory, nor has the bond been ratified by exchange of blood, so far as I can learn. In North Albania, however, it still carries full blood-relationship; and blood is exchanged when taking the vow.

The old father Pero on hearing of Batrich's death tears at his beard and eyes. Face-tearing is now prohibited by law in Montenegro at funerals, but is still done in out-of-the-way places. I have seen a case. A youth, Stevo, cousin of my guide, died in Manchuria (he was with the Russian army), when I was living at Dugi do. The poor lad had been in his grave six months when we got the news. But, (with the exception of course of the burial) all the usual rites had to be carried out.

The boys were sent out to all the villages to tell all the tribe the day fixed for the mourning. We roasted and ground the coffee at our house. My tribe has made a rule to give no *rakija* (spirit). The old mother of Stevo was not told of his death, but sent on a visit to her married daughter, that she might not see the funeral preparations till all was ready. I was horrified at this, but was told that if she knew she would begin to cry at once, and that as she was very old she would then be too exhausted to wail in public on the proper day. On the morning of the day we went to the house of Labud, Stevo's elder brother, and there a *trpez* or table was arranged. That is, that in default of a body to mourn over, a dummy is made. Coat, waistcoat, knickerbockers, white gaiters and leathern sandals are laid out on the table in the semblance of a man and girded with the sash and weapons. A cap is laid where the head should be. I have seen this more than once. The forlorn emptiness of the man's actual clothes give an almost more poignant idea of loss

than the actual corpse. Early on the day of mourning came all Dugi do, the sons of Punosh. They all met up by the church, and came in procession, all the men first and then the women. When within a hundred yards or so of the house they raised the death wail; an awful wailing rhythmical chant. You can hear it miles away.

Lé lé s'nama Stevo moji brate!
Lé lé s'nama moj' krilati brate! etc.
Woe, woe to us Stevo oh my brother; woe, woe to us, my wingèd brother!

The cry is taken on a quick breath which rapidly becomes a convulsive sob. The procession arrives in a state bordering on frenzy. I knew most of these people well. I confess I was almost terrified when they dashed into the little dark cottage; I was just inside the door. I went indeed as one of the family. The men hurled themselves into the room. I ran into the corner or I believe they would have gone right over me quite unconsciously. They danced madly in front of the *trpez*, leaping a yard from the ground, thumping their heads and breasts with their clenched fists, and yelling frightfully. The tears streamed from them. They threw themselves on the dummy body, almost fighting to kiss it. Behind the table were the aged mother supported by her two married daughters. The younger, a most beautiful woman, had ripped her face down with her nails and, sodden with blood and tears, was, with her mother and sister, singing the praises of the dead boy. These songs are improvised, but contain a great number of stock phrases (they are called *tuzenje*).

The men were allowed some five minutes (a howling orgy of grief), then Pop Gjuro, who was master of the ceremonies, cried, "Brothers! you have wept enough. Make place for others." They withdrew, some reeling with exhaustion. Pop Gjuro caught all those that were far gone and handed each a cup of strong black coffee as a stimulant. The women came in next and the same ceremony was gone through, but they did not jump. The three women behind the table sang incessantly in a kind of awful possession, apparently unconscious of all that went on.

And so, village by village, came the whole *pleme*. And not only the people on the spot, but all the married relatives, even those from Cetinje, a long four hours' tramp across the snow.

The odd part of this is the mechanical way in which tears are caused by the mere fact of *Lé Lé Léing* (*naracanja*). The Vrbica men mostly did not know the poor boy's name and had to be coached in the details before beginning to wail, but within a minute or two of beginning they were sobbing bitterly. Coming home people compared notes as to who had cried best.

In former days when the Montenegrins shaved their heads and wore a long crown-lock only, it was customary to cut off this lock and to throw it into the grave. Women also cut off their hair. I have seen a long tress of a woman's hair fastened to the wooden cross on a grave in the Herzegovina.

Apples were, and I believe are, thrown into the grave. In the Herzegovinian parts of Montenegro, oranges, bits of bread and quantities of rags, fragments torn

from the mourners' clothing, are always put on the graves at the present day, hung on to a young tree put at the head of the grave. I have been to several *trpez* funerals, but have not been to all the ceremony when there was a corpse, as I should have had to kiss it, and could not have evaded doing so without hurting the relatives.

I have seen an interment from a distance. The end is most impressive. All the *pleme* stands round the open grave. The elder calls aloud on the deceased by name. "Marko! Marko! Marko!" Hails him loudly and pauses for a reply. Then, after a long silence, the whole lot shout together, "Goodbye, brother," and turn away from the grave.

The only point left to be touched on in the ballad is that of head-hunting. This primitive custom was common to all the Balkan people, both Christian and Moslem. It is a very deeply rooted custom, and is not yet extinct. My own guide is bitterly ashamed of the fact that he did not get a head in the '76–'77 war, and urges that he was "only sixteen" at the time. He confessed it reluctantly and added, "I wish you hadn't asked me." Of course, it is illegal now in Montenegro to put heads on sticks as formerly. But I heard of heads on sticks in North Albania in 1904—Montenegrin heads taken on the frontier. There were any amount of heads taken in the last war by all parties. The Bishop of Kastoria in South Macedonia brought head-taking quite up to date in 1903 by having the head photographed afterwards, and sending copies to his friends as Christmas or Easter cards—I forget which. I met this right reverend gentleman—an olive-skinned, black-haired, rather slit-eyed man with a sloppy lower lip.

I have no doubt that Osman's head ornamented old Pero's roof tree for many a day, and afforded him great satisfaction.

So much for the ballad. In sitting round the fire of an evening one picks up a lot of miscellaneous beliefs and ideas. I will give some examples. It is difficult to know which to choose. In the Crmnica valley when a bride is waiting for the groomsmen to fetch her away to be married it is the duty of her brothers to stand on either side of her and watch that no evil-intentioned person ties a knot in the fringe of her *strukka* (long shawl or plaid). Should this happen her first child will be born deformed, or she will miscarry. In all districts it is most unlucky for her to look back when leaving her father's house. The groomsmen have to take care that she does not. A woman who is with child and craves for any particular food must beware not to touch any part of her body with her hand. For, should she crave for milk and touch her hair the child's hair will be white; should she crave pork the touched spot will be covered with pig's bristles, and so forth. A woman can tell if her child will be a boy or a girl by throwing a dried fish bladder on the fire. If it go off pop there will be a boy; if it only fizzles out, a girl.

Three days after the birth of a child a woman is supposed to be fit to go out and fetch and carry wood and water as usual. She may not make bread or cook till the child has been christened and she churched. There are great rejoicings

when a boy is born and great disappointment over a girl. In some places all the men of the *bratstvo* go to the woman's room the next day and drink and dance and sing to welcome the arrival of another male. I am assured the newly-made mother enjoys this extremely. I heard of this in old Servia, just over the Montenegrin frontier.

Medicine was and is largely practised by wise women. Every disease, they say, has its plant. Most of the remedies are herbal. Burn oak apples and breathe smoke for a cough. The following, I am told, is excellent for pneumonia. Take a dried gall-bladder of a pig and pound it up; mix it with gunpowder and drink it in strong *rakija*. This is very powerful, I was told by a man whose life, so he said, had been saved by it. The whole company had great faith in the prescription.

The wise women of the Crmnica valley have an odd cure, or rather charm, for rupture. The wise woman puts some water, which must be freshly drawn, into an *ibrik* (long-necked metal pot). She puts it on the fire and crosses it three times. When it boils she says, "Water, I call on you three times from Heaven to earth. If Mr. So and So of such an address is ruptured, let his bowel return like this water." So saying, she turns the boiling water out into a metal dish, and holds the *ibrik* mouth down in it. As the hot metal pot cools some of the water rises again into the *ibrik*, the more the better. A fee of 2*d*. is asked, and the operation should be repeated till relief is obtained. It is usual also to give the operator some eggs or a cheese to induce her to begin.

Native surgeons have a great local reputation for dressing wounds and setting bones. The traditional way of dressing a wound is remarkably antiseptic. It was on no account to be washed with water, but cleaned out several times with strong wine or *rakija*. I have the contemporary account of a duel fought with handjars in 1853 with the description of dressing the wound, a great sword cut that severed three ribs. This was washed first with white wine. A lot was poured in, and the man rolled backwards and forwards. An old man I know entertained me all the evening with the details of how he was shot through the lungs at the battle of Vučidol in 1876. He was taken to the Russian field hospital, and was very bad. Got worse and worse. "The Russian doctor then said he must cut another hole in me between two ribs. I had two holes already, so I thought it very stupid. I knew I should die if I had another hole in me. I asked the black sister to tell my people to save me. They came in the night and carried me away. I was so thin my wife carried me like a baby. They poured *rakija* in at my top wound. It made me cough most dreadfully. Some of it ran out of the other hole. The black sister came and put the bandages on. They poured *rakija* into me very often, and the wound got well, and in a year I was strong. I always pray for the black sister who saved me from the doctor who would have cut a hole in me." He is an old man now and as hard as nails. He has drunk *rakija* ever since and no wine. It is firmly believed that whichever you are dressed with, wine or *rakija*, you must drink in future.

The local surgeons had also a great reputation for trepanning. In such a rocky country plenty of people tumble over cliffs and dent their skulls in. I have not seen any of the instruments. When the piece of bone had been removed a lump of sheep's wool was used to swab out the hole.

I was told that when there was a severe epidemic of cholera in Montenegro in the sixties it was customary to put a man in a field and to plough a circle round him to keep off the disease, but it was not successful. I was also shown a rock with a large natural hole through it, through which infants were passed for the same purpose.

A very strange remedy for fever, which I am told is still used, is to make a fire drill with a piece of hard and a piece of soft wood. The patient helps to work the drill. The fire then passes out of his body and ignites the wood, and he gets well!

There is, in fact, no end to the funny things you hear if you live with the people as one of them—fables, games and humorous tales. They are a simple and hospitable people, and poetical and imaginative.

When I left Montenegro last I said I must go back to England to my own people, and find myself a house, for I had no home to live in. And an old man said, "Why shouldst thou seek for a house, O lady? The whole white world is thy house, and all men are thy brethren."



FIG. 1.— POP GJURO.



FIG. 2. — BOGOMIL GRAVESTONE.



FIG. 3.—PLAYING THE GUSLE.

SOME MONTENEGRIN MANNERS AND CUSTOMS.

ANTHROPOLOGICAL NOTES ON THE BANGALA OF THE UPPER CONGO RIVER.

By the Rev. John H. Weeks.

Preface.

The following notes relate to the tribe generally known by the name of Bangala of the Upper Congo River, and represent their state, customs, and mode of life in 1890 (and subsequent years), when first I went to live among them. Up to that time they had had very little intercourse with Europeans, certainly not sufficient to affect their customs or modify their habits of life.

It will be my aim in these notes to put in permanent form what was observed then, and also what came under observation during later years—and was jotted down—that represented their true natural state.

I lived among these people from August, 1890, to April, 1905, as a missionary of the Baptist Missionary Society. Our intercourse with the natives was most intimate, and our journeys, for evangelical purposes, very frequent. During that time I resided at Monsembe, a town about 40 miles below "Nouvelle Anvers" (otherwise known as Diboko or Iboko) on the right bank of the River Congo. While there, I collected a vocabulary of some 7,000 native words, and a great number of their folklore stories. Some of these stories have been published in the *Journal of the Folklore Society*, and I trust as opportunity permits to publish more of them. The vocabulary has not been printed because, by the time we had it ready, the population had so decreased that our station at Monsembe was abandoned.

I. Clothing.

Clothing was worn both by men and women. Many of the men wore "trade" cloth, some wore bark cloth. The women wore skirts made from the new, tender fronds of the palm tree. The outer skin was scraped off the frondlet, and the fibres dried in the sun, and plaited on a string; their skirts consisted of about twenty of these strings tied round the waist. The attached fibres were cut to suit the taste of the wearer. The younger and more *chic* the person, the shorter the skirt. Often the attached fibres were cut so short as to expose the lower part of the buttocks. The older and more staid the person, the longer the skirt. When mourning, untrimmed skirts were worn reaching to the knees. Thus worn, they looked untidy, and gave the impression, which they were intended to convey, of negligence

of personal appearance through grief. The nicely trimmed skirts gave the wearers the appearance of a ballet girl.

The men wore their cloths between their legs attached to a string or belt round the waist. The outer sides of the thighs were left uncovered. A piece of cloth 5 or 6 feet long, and from 12 inches to 36 inches wide was taken, and one end was passed under the belt in front, and the other end between the legs and fixed in the belt at the back. For ordinary purposes of walking, the man either wore the loop of the cloth reaching to the knees, or pulled all he could pass through the belt in front, and let the loose end dangle to and fro, like an apron, as he walked. When at work, or on a journey, the ends were pulled up evenly back and front, thus giving greater freedom to the legs.

There was no special covering for the genitals. Both men and women were careful to cover themselves on all occasions, whether bathing, fishing, or sitting down. When bathing or fishing they would wear an old cloth or some leaves. If you accidentally came on a man bathing he would either return to deep water, or sit down in shallow water, or cover his genitals with his hands. Of course, there are exceptions to this rule, as there are some men and women everywhere who will shamelessly expose themselves. Ordinary natives have remarked to me on the indecency of white men stripping on a steamer's deck, in view of everybody, and jumping into the river.

When sewing their cloths they used a native-made needle and palm fibre. The needle was about 5 or 6 inches long, and the eye was formed by tapering one end, and turning it over to form a loop, the end was welded into the body of the needle, and the whole well tempered.

Skin hats were worn at "palavers," and during fights. They were more for protection against cuts than for the sake of ornament. The cloths and clothes of dead men were buried with them, or if the article was out of the common it was first broken (killed) or torn, and then placed on the grave.

At war time a fighter would cut off the lips of the man he killed in battle, dry them, stud them with brass chair nails, and wear them, suspended from a string, round his neck as a token of his bravery.

It was no uncommon sight to see a native protecting his head and shoulders from the rain by a large plantain leaf, or a woman guarding her recently-dressed hair, or her baby from the rain, by a plantain leaf or large wooden platter. Directly the natives saw an umbrella they appreciated its utility.

There was no difference in dress between the various ranks of men and women. As a rule, chiefs, headmen, and freemen were more shabbily dressed than slaves. I think the reason for this was that the chiefs, etc., were not anxious to display their wealth for fear of being charged with witchcraft, but at the same time they allowed their slaves to dress as well as they could so as to be contented with their position. On grand occasions, chiefs, etc., would dress up in fine clothes, and have their bodies anointed with palm oil and cam-wood powder.

II. Personal Ornaments.

The hair was frequently dressed in various shapes, but the most common method was to draw the hair from the sides and back to the top of the head, and there plait it in such a way that it formed a tail-like elongation protruding over the forehead and curving upwards. This was the style most affected by men, and the more dandified the man the longer the "tail," as they used to buy hair to plait in with their own. Women sometimes had their hair done in this fashion. The hair was often cut short, and sometimes, for cleanliness, shaved clean. In times of mourning for a relation the hair was shaved on one side only. Frequently the hair was so shaved that small tufts of hair were left here and there about the size of a sixpence, and these tufts when long enough were tied in knots.

Boys and girls would have their hair cut short, and bands so shaved that their heads resembled well-planned gardens, with the hair for the flower beds, and the shaved bands for the paths. A design had its run for a time and then gave place to another that became the fashion. After a few months an old design would reappear and be the fashion again for a month or so. The following are names of two or three modes of dealing with the hair:—*Mukolola* = to shave all the hair off the head. *Bokengo* = to shave high up in the forehead so as to make the face appear round, and the forehead very high. *Mampoka* = to shave a triangular patch, the base of the triangle on the forehead, and its apex on the centre of the head. *Munkoka* = to shave each side of the head, leaving a band of hair from forehead to back of neck. *Voto* = to draw the hair up and plait the "tail" as described above. There was another mode: to shave the back and front of the head, leaving a band of hair running from one ear across the top of the head to the other ear. As stated above, there were other designs like a garden.

Beards were worn by any who could grow them, but, while free men always plaited theirs, slaves were never allowed to do so. Moustaches were worn by all who cared to do so. The moustache was often shaved off, and the eyebrows also, and it was a very common practice for the eyelashes to be pulled out one by one.

They were fond of brass ornaments, especially the women, who often wore heavy solid brass collars weighing from 2 lbs. to 18 lbs. When they died their heads were cut off to remove the collars. The armlets were also of brass, but very light as a rule; and sometimes the fingers were wound round with brass wire. The anklets were various in shape and weight, sometimes heavy brass rings were put on one above the other, and here and there would be seen a woman with a spiral leg ornament reaching from the ankles to the knees. The men wore light brass ornaments round their wrists and ankles which were put on and off according to the work they had to do. Sometimes ivory anklets and armlets, neatly cut, were worn. Young children often had thirty or forty light brass and iron rings round their arms, legs, and necks. These various ornaments were kept bright by frequent polishing.

At dances, leaves, vines, and small branches were worn with very picturesque

effect. Small skins were hung from their girdles apron fashion, with the tails dragging on the ground. Hard seed-pods were tied round the ankles to cause a rattling sound as they shuffled their feet in dancing.

The belts they wore had knives of various sizes and shapes attached to them. Cuirasses of elephant and hippopotamus hide were worn to protect the back. They were hung from the shoulders by loops and were laced in front. These cuirasses had a sheath knife fixed to them where the ends met in front. This left the hands free for the shield and spears, and gave them a weapon at hand should they throw all their spears at the enemy.

A woman during the latter months of her pregnancy was often marked with different coloured pigments on the breast, abdomen, shoulders, temples and forehead, and wore two or three charms that she might have a good delivery, and her coming child good health. These pigments were put on, and the charms made and given, by an *nganga* medicine-man, who was well paid for his trouble.

The teeth (incisors) were cut to V-shaped points; some had the whole of their upper front teeth thus cut. This operation was supposed to improve their appearance. Lads and girls were cut at about the age of fourteen to eighteen or when they could bear the pain and desired to be in the fashion.

I said once to a native:—"Your teeth are cut like a dog's." He replied:—"Well, your teeth are like a bat's."

III. Painting and Tattooing.

It was the custom to wash the body well, anoint it with palm oil, and then dust it with cam-wood powder. This powder was procured in the following way: A block of cam-wood 10 or 12 inches long by 4 to 6 inches wide, and 4 or 5 inches thick, was firmly fixed in the ground by wooden pins driven along the sides and ends; another piece of cam-wood of the same dimensions was taken in the hands of the operator, a little water was sprinkled on the lower block, and the loose block was put upon it and gently rubbed to and fro until a red paste was formed which gradually ran down the sides. This paste was taken off and dried into hard cakes in the sun. When required a piece of the cake was broken off, ground into a fine powder, put into a cloth of loose texture, the ends tied and the cloth was dabbed on the body, and as it was thus dabbed the fine red powder worked through the cloth and covered the body. It was a lady's powder box and puff in one. The skin thus treated kept healthy and soft and free from scabs, etc., and received much protection from rain, sunshine or cold.

Native pigments were used for decorating the body, the principal colours were:—Red procured from a shrub called by the natives *Lungunda* (*Bixa orellana*), from which we get arnotto. The pod was opened and the seeds crushed and the pigment was painted in lines on the face and body. Women dyed their dresses with it. For years the writer used it in school as a substitute for ink. It retained its bright colour for many months. Blue, called by the natives *Jamali*.

Yellow or light brown called *Yengo*, which was a kind of clay. A black called [1]*Bwindu* made from soot and oil. All ages and both sexes used these pigments for decorative purposes, and slaves could use them as freely as their masters. Young men and women employed them more frequently than their elders.

In times of war the whole face was blackened with a thick paste of oil or soot, or oil and burnt ground-nuts; the eyes were surrounded with circles of chalk or white clay. This was to disguise them from their enemies.

When mourning, the body was smeared over with white clay or chalk; sometimes only half the body was treated. Women mourning for a husband would go naked for a few days; and men would rub their bodies with clay, and wear any old cloth, or an old string fish net when mourning for a wife or near relative (see under Section II, *re* hair, p. 99.)

I noticed three kinds of tattooing among them. 1. A single line of elliptical punch-marks running from temple to temple just above the eye-brows. 2. A cock's comb (called *Likwala*) running from the tip of the nose in some, and from between the eye-brows in others, to the crown of the head. 3. A cock's comb as above plus a palm-leaf on each temple. When you looked at the profile of a man, his tattoo stood out like a cock's comb. *Likwala* means cock's comb. The first kind of tattooing was to be found only on old men and women, showing that they were of near kinship to the *Libinza* people who live behind *Diboko* (Nouvelle Anvers). The second and third tattoos were seen singly and together on men and women, boys and girls, from the age of thirty-five downwards. Slaves from other tribes would imitate the tattoo of their masters, hence the *Mongo* tribal marks (lumps the size of a bean on the nose and across the forehead) would be seen on a man together with the *Likwala*, or the palm leaf on the temples (tribal mark of a people on the Upper Lulanga River) and the cock's comb. Slaves taken or bought young would allow their distinctive tribal mark to disappear if it would, and try to work up a good size cock's comb like their owners.

The tattooing was begun in earliest childhood by the parents, but not more than sufficient to show that the boy or girl belonged to the tribe. Later on in life the boys and girls would have the cicatrices enlarged, and at the age of eighteen or twenty and onwards the person who wished to be thought fashionable would work away at his tattoo every week or so, cutting it deeper and putting wads in the cuts to cause the flesh to stand up. The smarter the person the bigger the *Likwala*.

I only saw two so-called idols (they were really charms); two pieces of wood about 6 inches long and as thick as one's thumb. Each had one end curved in the shape of a head, and each had the cock's comb tattoo on it.

Cicatrices were to be seen on the stomachs, chests, shoulders, thighs, backs and arms of some natives, but these were largely, if not entirely, due to the practice of

[1] *Bwindu* = blackness, verb *t. inja* = to blacken, v. int. *inda* = to be black. *Mwajaindu* = a small shrub-like weed used as a black dye. Sprigs of this plant were picked, crushed in the hand and rubbed on their paddles, etc. When they dyed a dress they boiled the crushed plant in some water and left the dress in the boiling decoction for an hour or more.

cupping. They were very fond of blood-letting as a cure for aches and pains in various parts of their bodies. These cicatrices were like elliptical punch-marks, but were rarely in the form of a pattern.

The corpse of an important person would be decorated with various pigments—the face was whitened, the cock's comb painted red or blue, lines of red or yellow were painted over the eyebrows, and from the shoulders down the arms to the wrists, and lines of colour were smeared about the body according to the taste of the artists. A cap of cowrie shells, and a fine cloth finished off the decorations, and then the artist charged two brass rods per person to view the body and kept the proceeds to pay him for his trouble.

IV. Ornamentation.

Before the arrival of white men at Monsembe it was the practice of the natives to ornament their saucepans with a herring-bone pattern and with bands; their knives and spears with parallel incised lines, and with herring-bone pattern; their shields being made of basket-work material had basket-work ornamentation, and often a border of lozenge pattern round the edge. The blades of paddles had parallel incised lines, and their canoes had a band of parallel incised lines along the outer top side. Handles of knives and hafts of spears were made in various shapes and studded with brass nails, or bound round with brass ribbon.

I never saw any drawings until we had been there a considerable time, and then they took to drawing sketches on the fronts of their houses, and on letters they sent to each other. These sketches were of steamers, houses, and people. Later, they took to making very fair models of steamers which were recognisable as representing steamers they had seen on the river. The material used was the potato-like substance of the plantain root, and red and black dyes.

It was interesting to watch them with their first pictures. I took there a bound volume of the *Graphic*, and placed it where they could easily take it any time they wished to look at it. At first they were not able to take in a picture as a whole. They would pick out a feature and say, "That is a nose, or a mouth, or an eye," as the case might be. Thus they traced out a man or a woman and said, "Why, it is a person!" The same was done with a house, picking out the details as a door, a window, etc., and the same with scenery. Later they could take in all the details at once. They had to learn to understand pictures in the same way that children learn to read—first the a, b, c, then the c a t, cat, and the d o g, dog, and lastly, the whole word or sentence at a glance. Sometimes they would appeal to us to explain a difficult detail, as a railway train, etc. On one occasion I showed them a picture of the London County Council meeting to talk a "palaver." They looked at it carefully for a few minutes, then scrutinised it more closely, and said, "But we don't see any spears and knives." They themselves never talked a "palaver" without having their knives, spears, and shields to hand in case of a disagreement.

The drawings made on their houses were done with charcoal, and in making sketches of persons the genitals were usually much exaggerated, and also the cock's comb tattoo. They had no idea of perspective, but a sense of humour was often exhibited when "taking off" a person. They carved excellent stools out of single blocks of wood, and also large and small canoes. With teaching they made good carpenters, and were always handy with tools.

V. Leather Work.

The skins of all animals were used for different purposes. The skin of the hippopotamus was used for cuirasses; that of buffalo, antelope, goat, and sheep for belts, basket-straps and knife-sheaths; that of monkey, sygale, monitor, mongoose, and civet cat for hats, belts, small sheaths and ornamental aprons, or for containing their charms; that of the boa constrictor for belts, sheaths, and drum heads. The skin was either stretched and pinned by wooden pegs on the ground, or laced on a frame. The bits of flesh were cut off, some wood ash rubbed on and then it was left to dry in the sun. If a soft skin was desired oil was rubbed in after the skin was thoroughly dry. It was not the custom to take the hair off any of the skins. Leopard skins were prepared in the above way, and were usually preserved whole as mats upon which chiefs and headmen sat.

If the owner of an animal wished to sell the flesh in open market the skin was not taken off, but the animal so cut up that a piece of skin was left on each portion. The buyer could then see the kind of animal flesh there was for sale, and would know for a certainty whether it was tabooed to him or not. Goats, sheep, dogs, etc., were thus cut up and sold on the market or hawked for sale through the villages. Antelopes and other large game were hunted by a number of men, and the latter and their families and friends would eat the game between them, so there was no necessity to cut it with bits of skin left on: the animal was skinned, and afterwards cut up.

Although the skin of the electric fish (called *Nina*) is more than half an inch thick, I never saw it used for any purpose, in fact the people would not even eat the flesh. I once tried to dry the skin in the strong sun, but it became putrid before the sun had any effect upon it.

The skins were usually prepared by men and boys, but I do not think that there was any objection to women and girls helping in their preparation.

VI. String.

The bark of a water plant, called by the natives *Munkungi*, is used for making string and rope. The withes are cut in lengths from 3 feet to 4 feet long and carried into the town, then the bark is peeled off—it strips easily—carefully scraped on both sides by running it between the edge of a knife and a board, and then spread in the sun to dry. The strips are taken in the hand length by length and spun by twisting them between the palm of the hand and the thigh of the operator

The different threads are then plaited into a string, and these are plaited together into cords ⅜ of an inch in diameter. Sometimes the palm frond fibres are used for making the finer strings and twine. The strings are used for making mats and fish nets.

The strong cords are used for tying up their canoes, and bundles, and also plaited into mats about 3 feet long by 1 foot to 1 foot 6 inches wide, for crushing the sugar cane fibre when making sugar cane wine. The better made strings and twines are used for making shoulder bags or satchels, also for fighting belts. These belts were from 9 feet to 12 feet long and about 4 or 5 inches wide, and generally well smeared with pipe-clay. They were wound round the abdomen just before a fight and were a good protection against spear thrusts.

The string was wound on a wooden spool and the fish nets made by the ordinary process of netting; the mesh varying according to the size and purpose of the net.

VII. Weaving.

I never noticed any weaving among the Bangala, but in the early years of the Mission it was no uncommon sight to see it among the Lower Congo people, especially around San Salvador.

For some years after we arrived at Monsembe the old folk wore bark cloth. A strip of bark 18 inches long by 5 inches to 6 inches wide and 1½ inches thick was taken from the tree—the wild fig tree, or from a tree called by natives *Ngumbu*. The strip of bark was soaked in water for a time and then beaten with an ivory mallet. The bark was laid across the palm of the hand when beaten. The strip gradually widened to 18 inches, and lengthened to 3 feet or 4 feet. Some cloths were very evenly beaten so that no holes appeared; other strips were not so well done, and holes and uneven places showed in the finished cloth. *Likuta* was the name given to bark cloth by the natives. *Pelele* is the name of an ancient native-made cloth, but I never saw a specimen of it, so cannot speak about its texture.

VIII. Basket-work.

Not many baskets were made by the Bangala, but the most common was a wedge-shaped basket of medium texture, and with a capacity of about half a bushel, used for carrying home farm produce. This was made of split cane of the same thickness and style as the seat of a cane chair. It was a large oval at the mouth running down to a small oval at the bottom, and was carried on the back either by a single strap across the chest or forehead, or by two small loops through which the arms were passed. The oval at the mouth was about 18 inches long, and 10 inches to 12 inches in diameter, with a stout cane woven in to make it keep its shape. The basket was about 18 inches to 24 inches deep.

For soaking their cassava roots long conical baskets were used with lids to tie down. These baskets were about 6 inches in diameter at the mouth, and tapered to a point. These were 2 feet long. The cassava roots were put in and the lids securely tied, and the whole dropped into the water.

Occasionally I have seen their large sugar-cane wine pots covered with basket-work and stout handles worked on them. Other kinds of baskets found amongst this tribe were made by slaves captured or bought from neighbouring tribes. Their shields were all made of basket-work, but I never saw one in the making, and believe they were bought ready-made from another district.

Strainers were very commonly used among them for cooking purposes. The principal meal of the day was composed largely of steamed cassava. A large saucepan was nearly filled with water, a strainer was then fixed in the saucepan, the soaked cassava laid carefully over it, and another saucepan inverted over the top.

The materials used in making the above baskets are the calamus palm, and the bamboo (*Raphia vinifera*).

See also under fish traps for other kinds of basket-work (p. 125).

IX. Pottery.

Pottery made by the Bangala women divides itself easily into three kinds, 1. Saucepans of various sizes but only one shape. 2. Wine pots from 6 inches high to 2 feet 6 inches and broad in proportion. 3. Fire-pans or hearths used for carrying fire in their canoes when travelling. These were the same shape as No. 1, but had three prongs overhanging the top of the saucepan upon which to put an ordinary cooking saucepan and yet allow a free passage of air to the fire.



They had no knowledge of a wheel, but built up their pottery on a base by rolling the clay between the palms of the hands into long pencils about the size of a finger, and then welding the strip to the base and flattening it out with the fingers as they worked round the pot. The only decorations I have seen on their pottery are "chevrons" and "herring-bone."

In baking their pottery no kilns were used, but fire-wood was laid carefully on the ground, and the pots arranged on top, and then small fire-wood and twigs, etc., were thrown over the lot and the fire lighted.

On the Ubangi River I saw some varnishing done. When the pots were sufficiently baked, and while still hot they were rubbed over with lumps of gum copal. Pots treated in this way were used as drinking vessels, and as dishes in which to place cooked food. Some, before being rubbed over with the gum copal, were smeared with the arnotto dye, and thus showed red through the glazing.

No. 1 was called *Lobeki*. No. 2 *Mobako*, or small size *Ndubu*. No. 3 was named *Likenge*. There are many other names, but they only differentiated the sizes, and also showed whether they were well or badly made, etc.

Gourds or calabashes are cultivated and used as bottles, pots, and dishes when cut in half.

X. Dyeing and Painting.

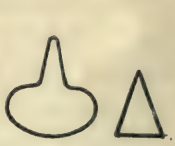
Under Section III (p. 100) I have written fully on their various dyes, and how they are prepared. Their favourite colour is red, to judge by the frequency with which it is used in dyeing and decorating; but it may be that this colour, being cheap, plentiful (as cam-wood powder can easily be obtained, and the arnotto bush grows in all the towns), and always to hand, is therefore used more freely than the other colours which are scarce.

For colours used on the dead and the living for decorative purposes, and on fighters for disguising themselves, see Section III. Apart from decorating the person colours were not much used. Occasionally one would see a woman's dress and sometimes a paddle coloured red or black.

Punting sticks were often ornamented with black spiral bands, and these spiral bands were made in the following manner: the stick was barked and made smooth by scraping; a strip of the thin bark was taken and wound in a spiral round and down the stick, then it was held over the fire until the uncovered part was slightly charred. The band was removed and the stick polished by rubbing and the alternate spirals of white and black were in evidence. This was a rude form of stencil.

XI. Metallurgy.

Iron ore was imported from the Lulanga River, and smelted in native crucibles. The furnace was a hole about 18 inches deep, about 18 inches in diameter at the top and 8 inches to 10 inches at the bottom. Charcoal made from hard woods was used. The smelting pot with the ore was put in the middle of the furnace, and the blast was furnished by native bellows, and conducted to the heart of the furnace by a conical tube of burnt clay. The bellows were cut out of a solid block of wood. There were two round holes each 8 inches to 12 inches in diameter, which opened below into a common wooden tube fitting into the above mentioned clay tube. Over each of the holes a soft skin was securely tied, and to the centre of each skin was fixed a stick about 3 feet 6 inches to 4 feet long. The operator worked the stick up and down alternately, and the more vigorously he worked the more powerful the blast.



The native blacksmith made hoes and axes of the shapes indicated; knives of various shapes and sizes, spear-heads of various kinds; and piercers used in mat making; large hooks for catching crocodiles, and gouges for canoe making. Unfortunately the introduction of European knives, hoes, and axes ruined the native industry.

For some time after we settled at Monsembe the blacksmith would buy up the iron bands from our bales and boxes, and work them up into hoes, axes, knives and spear-heads. The anvil was a block of hard wood, the hammer was a bar of iron

about 8 inches long, and 1¼ inches square. They had no pincers, but when the piece of iron was too short to hold while working it they made a wooden handle for it which was slipped on and off as required.

Large brass rings for the neck were made in the following way:—The potato-like substance of the plantain root was taken and cut into shape of the desired circumference and thickness; this model was surrounded with well-kneaded clay, a funnel shape opening being made to let off steam and pour in the metal. This, when completed, was baked in the fire, and as it baked the plantain root model inside was burnt. The ashes were afterwards cleared out and the molten brass poured in. When cool, the mould was broken and the brass ring was well polished by scraping and rubbing, and "herring bone" and "lozenge patterns" worked on it. The currency of the country was the brass rods, and these were used for all their brass work, and often the brass worker would get together as many rods as possible and cut ½ inch to 1 inch off of each, and so get his brass cheap. In 1890, the brass rod at Monsembe was a full 15 inches long, but by 1905 it was only 12 inches. This was largely due to the above process of "sweating." Twenty-five years ago the brass rod on the Lower Congo was 27 inches long, now it is barely 4½ inches. Of course, the price of things has gone up in proportion to the shortening of the rods, or, to put it another way, the rod has cheapened as it has shortened, and one has to give more of them for any article one buys. On the Lower Congo rods were about twenty to the franc fifteen years ago, and now they are one hundred and twenty to the franc.

Long spiral leg rings were made in the following manner:—A bamboo, 12 to 15 feet long, was split (bamboo, *Raphia vinifera*, in which there are no nodes). The pith was taken out of one-half to the desired width and depth, and the molten brass was poured along this channel. This gave the operator a long brass rod about the thickness of the index finger; this was carefully beaten round, scraped and polished. This long rod was taken, and starting from the ankle it was wound round and round the leg to just below the knee, each circumference of the spiral being made a little larger than the one below it. At the bottom it immediately impinged on the ankle which bore the whole weight, and at the top it would have 2 to 3 inches play.

Copper was known, but I never saw any of it worked, or worn as ornaments. Brass ribbon was made by beating out the brass rods to the required width, and this ribbon was used in ornamenting spear handles, knife handles, and knife sheaths. Such ribbon was generally ornamented with punch marks.

Blacksmiths were honoured as skilled men always are in Africa, but were not treated with any superstitious fear. The smith learnt his trade either by an apprenticeship to his father if he were a blacksmith, or to the village blacksmith. Iron was called *Ebuni*; iron ore, *Makele*; liquid iron, *Botoko*; to work in iron, *Tula*. Brass was called *Je*; brass ribbon *Bojingu*; brass rods—the currency *Ntaku*. Copper was called *Dikulu* or *Likulu*. A blacksmith was always known

by the name of his trade and was consequently called *Motuli* = the one who *Tula* or works in iron.

XII. Conservatism.

The natives are quick to imitate where imitation is possible. They are often restricted in giving expression to new ideas through lack of suitable tools and materials. No sooner did they perceive the advantages possessed by our larger houses over their huts, than they began to build houses of three rooms, and made tables, chairs, forms, cupboards and bedsteads. They saw the advantages of a hammock chair over their uncomfortable wooden stools, and imitated it. We exchanged tools, screws, nails, hinges, etc., for fowls. Hence they were able to procure the tools with which to work, and we had the fresh food for our table.

In judging the conservatism of natives and the way in which they have from generation to generation simply followed in the footsteps of their predecessors, one must not forget that they have been, and many tribes still are, bound fast by witchcraft, fetishism and superstition, and any tendency to burst these more than iron bands has been suppressed by fear of being charged with witchcraft. Some twenty-five years ago I knew a blacksmith who made a very good imitation, from old hoop iron, of a trade knife, and when the king heard of it he thought he was too clever and threatened him with a charge of witchcraft if he made any more like it. If the man who made our locomotives had lived here, in Africa, and had given play to his inventive genius, he would not have been honoured, but killed as a witch. The native had a deep-rooted feeling that anything out of the ordinary was due to witchcraft and treated it as such. Some years ago I knew a native medicine woman who was successful in treating certain native diseases, and as she became wealthy, the natives accused her of giving the sickness by witchcraft in order to cure it and be paid for it; for they said, "How can she cure it so easily unless she first gave it to them?" She had to abandon her practice or she would have been killed as a witch.

The introduction of a new article of trade has always brought on the introducer a charge of witchcraft; and there is a legend, that the man who discovered the way to tap palm trees for palm wine was charged as a witch and paid the penalty with his life. That, however, did not stop the trade in palm wine. Through this fear of being charged with witchcraft, the natives would never of themselves have made any progress in art, science or civilisation. This fear was so real and so widespread that it stultified and killed every tendency to change and progress. The reasons which have caused a lack of material progress are the same that held them fast to their religious beliefs until the white man arrived with his tools, his skill, his medicine and his religious teaching. In their old state they maintained strict conservatism, which, however, was quickly broken down by contact with the white man whom they are always ready to acknowledge their superior in all things and worthy of imitation wherever this is possible.

XIII. Habitations.

The houses were rectangular in shape and about 20 feet long, 8 feet to 9 feet wide; 9 feet high at the ridge pole, with 4 feet to 5 feet walls. There was generally a partition in the house that divided off about 6 feet of it into a small sleeping apartment; the larger apartment was used by the children, dependants and visitors. Occasionally one came across a house with two such inner rooms in it. There were two small doors—one in the middle of the front and one in the middle of the back wall. This shape was common to the whole tribe and the only difference was in the size of the house and neatness of workmanship. No verandahs were found until they imitated the white man's, but sometimes wide eaves were built for much the same purpose.

A man would build a house for every wife he possessed—the native being too wise to put two women in one house—and these were generally built in a straight line or regular curve so that the owner had, at a glance, a view of all his front doors. It was usual for the owner to have a house for his own exclusive use in the middle of the row. Very often kitchens were built apart from the house, and sometimes very large unwalled sheds were built jointly by the occupants of a row of houses for cooking during the rainy weather, and for working and sleeping during the hot part of the day. Often young men of a similar age, and lads also, would join together to build a house for themselves, but no special importance need be attached to this, as it was the whim of a moment or the paramount influence of one or two lads or young men.

It was the usual custom (with occasional exceptions) to bury the owner in his own house, and it, together with any other houses he might own in the row, would be deserted, neglected and soon fall to ruin.

As a rule the houses were built in lines parallel with the river, with their front doors looking towards the latter. There were wide roads between the rows of houses. Thus you would see a line of bananas and plantains along the bank of the river, then a well kept road about 10 feet wide, then a line of houses, and immediately against the backs of the houses would be another line of bananas and plantains, then another well kept road, and then a line of houses and so on. In the towns away from the river the houses were built in line or otherwise, according to the whim of the builder and the suitability of the location for building in lines, curves or in scattered houses.

There was not much furniture in a native hut. A roughly made bed of split bamboos raised on forked sticks from 6 inches to 40 inches from the ground; a few papyrus mats, a shelf or so of split canes, a few saucepans and baskets, a few water gourds and wine pots, three stones or ant nests, between which they made a fire, and on the top of which they put their saucepans when cooking their food. In addition to these you would see some spears and paddles standing in a corner, a shield hung on the walls, and knives stuck in the grass

walls, or the better kind of knives in their sheaths hanging by straps to pieces of wood stuck in the walls. There would also be one or two hoes, an axe and a matchet, and perhaps a string fish net. The cane fishing traps were kept outside the house. In one corner you see a pile of firewood, and, on a shelf near the roof but immediately above the fire, some cassava and fish drying in the smoke.

The doors were stoutly woven in different canes and bamboos, and hung by loops either to a cross-piece above or to a strong upright by the side, and fastened at night by a cross beam or bar. When the owner left his house for any considerable time during the day, or if he left it for a week or month, he tied up the door, and fixed with string some special and peculiar charm of his own to the fastening, and then it was supposed to be secure from all intruders.

During the building of a house small palms or pieces of *Euphorbia candelabra* were tied to the king posts. These were charms to ensure good luck in building, so that the house might last long and be rain-proof. I have also seen such charms tied to the trunks of trees while they were being cut and shaped into canoes. The idea is the same as in house building—to secure durability of the object placed under the protection of the charm.

The houses were swept out regularly and the refuse thrown on the nearest rubbish heap, which was generally at the roots of the plantain and bananas, and thus served as manure to these plants. The latrines were not built in or near the houses, but ladders were made at the river's bank, and sometimes overhanging poles and planks—like small piers—were so placed that the river carried off at once all excrement, etc. It was no uncommon thing to see men and women waiting for each other near these conveniences. No remarks were ever passed and although ostensibly waiting, yet they always acted as though they were not doing so. There is a native legend about the man who is supposed to have been the first to make these ladders and piers. The people of the inland towns used the bush and the forests for the same purpose, and in many of these towns pigs were kept as scavengers, otherwise the larger towns would become very unsanitary. It is quite understood that no roads or bye-paths are dirtied, for natives are just as much disgusted by treading on excrement as we are.

In times of war I have seen them build a large number of small huts very close together and surround them with a strong palisade; it being easier to do this and defend it than to build a stout fence right round the town and defend so long a line.

To their houses there were no windows, and the smoke found its way out through the roof, the doors, or through the space between the walls and the roof. The doorways were about 2 feet 6 inches square, and as they were in the wall under the eave of the house, the person entering had to stoop very low to get to the door, and had to raise his feet over the threshold which was about 18 inches high. A man would get all the materials himself or with his slaves and sons if he had any, and build the walls and put on the rafters; then when all was ready, he

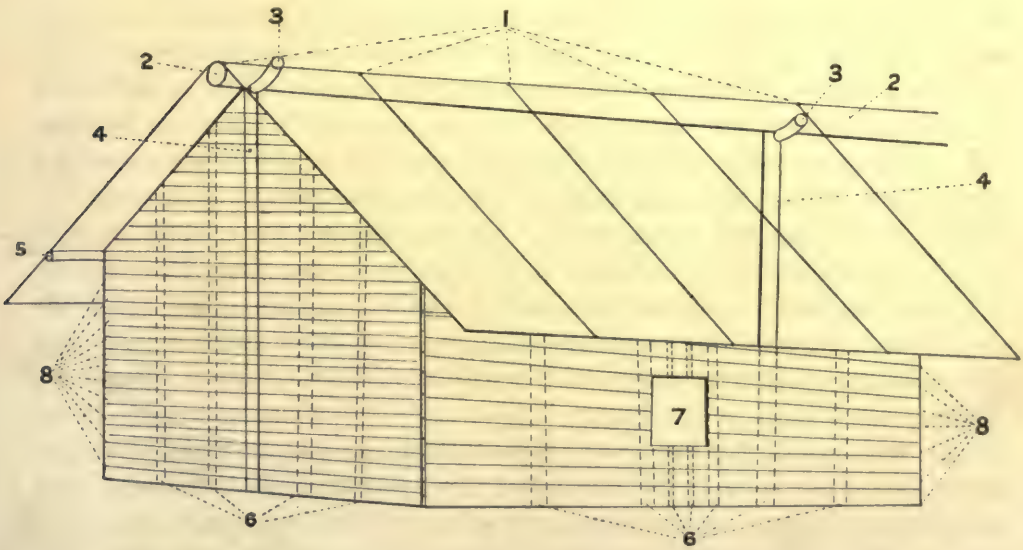
would call his friends and neighbours, and jointly tie on the *nsese* frondlets. This they completed in a day, and at the finish of their work they sat down to a feast of fish, cassava, and sugar-cane wine supplied by the owner of the house. Whatever the origin of this feast may have been it is regarded now as payment for services rendered.

When we went first to Monsembe we bought a very decent house for two hundred brass rods (equal to about 7*s.*) and a 1*d.* tin plate. Another not so large nor so good we procured for sixty brass rods.

When moving from one part of the town to another, or even when moving from one town to another, they take the best of their houses with them. The roof is lifted off by thirty to forty men and carried by them to the new site or put on a large canoe for transport by river. The walls are cut at the corners and each wall carried separately. They will finish a house easily in a day. A feast is given to the helpers.

Sheep and goats sheltered under the eaves of the houses at night or during wet weather. Fowls as a rule were kept in the houses at night; but occasionally small houses were built for them either on the ground or on piles.

They had no need for granaries as their food consisted principally of cassava roots which were dug up as required.



House was called *ndaku.* Badly made house *esasa.* Disparaging name for house *emfwasa.*

No. 1. Rafters, *molenge.* These were usually made of the mid-rib of the frond of the oil-palm.
„ 2. Ridge pole, *motondo*, also name of tree generally used.
„ 3. Fork for holding ridge pole, *meno*, *i.e.*, teeth.
„ 4. King-post, *likunji ja moloi*, *i.e.*, the husband stick.

No. 5. Wall plate, *mobonga*, sometimes *motondo*, as under 2.

„ 6. Stanchion, *yingu* or *likunji ja mokelele*. The latter name means king-post of wall.

„ 7. Doorway, *monoko*, *i.e.*, mouth. Door is *ejibele*, *i.e.*, the thing that shuts, from *jiba*, verb to shut, or *mokoki*, the thing that fills in a space or fits, from *koka*, to fit. Door bar, *mokendu*. To bar, verb, *ika mokendu*. Raised door sill, *etundu*.

„ 8. Split bamboos of the *Raphia vinifera*, called by the natives *linkeke*, plur. *mankeke*. These were laced on to the walls and ends with the rounded outsides to the weather and were very durable. The whole roof was *esamba*. The eave was *mobuku*, and sometimes *mokelele*. The back of house, *etutu*. Front, *bo bwa ndaku*. The long walls back or front, *makelele* or *mwembola*. End wall, *ejeki ya ndaku*, *i.e.*, that which goes across the house. Partition in house, *ekuka* or *epelo*. Foundation or raised earth on which all the houses are built, *moboko*, this about 12 to 18 inches high. Small room in house, *nitna*. Large room used for general purposes, *esobi*. Open room, *lingongo*. These are only found in towns where aliens are living. House without walls, *esamba* = roof.

The roof was made of the frond of the *nsese* palm. This was a palm that grew in marshy places, especially on low islands that were more or less submerged during part of the year. It rarely if ever had a stem, that is, the fronds sprang straight from the ground. I never noticed one with a stem or trunk yet, the older ones must have had them. The fruit hung in irregular clusters, and were covered with bracts like a fir cone, only reddish brown and shiny. There was a thin pulp containing a bitter oil which when clarified was much better for engines than ordinary palm oil. It had a large kernel which was hard and white, and looked like vegetable ivory. Pipe bowls were often carved from these kernels.

Many thousands of these fronds were gathered, and the leaflets on one side of the mid stems were turned over to lay on top or between the leaflets on the other side. This was done while green, then they were put to dry on the ground and so arranged in long rows that only the last frond was exposed to the sun. The leaflets of this last one curled while all the rest dried out flat. When dry these *nsese* fronds were tied to the rafters in fives in such a way that all the mid ribs were close together inside the house, and the leaflets outside on the roof fell in curves over one another, presenting a thick layer of leaves to the rain and sun. The roofs had to be very steep to allow the rain to run off freely. For nearly fifteen years I lived under a roof of this kind. It had one advantage, it was always very cool; but it had several disadvantages: an *nsese* roof would not last longer than three years, as the wind would blow the loose leaflets about and break them from their stems; in fact after every storm there was considerable *débris* from the roof. Then when there was a curling wind a whole length of *nsese* would be lifted and the rain blown in, covering half your rooms with water. To overcome these two disadvantages I made long cane mats in 6 feet widths and long enough to go from the eave of the house on one side, right over the ridge to the eave on the other side, and the ends were fastened to the verandah wall plates. These mats preserved the leaflets from being blown about and torn or worn by the wind, and they also kept the wind from lifting the fronds and blowing the rain under. They added two years to the life of the *nsese* roof. The nets were made of bamboo

splines ⅜ of an inch wide, very thin and 6 feet long, woven together by native string, leaving about 1-inch spaces between the splines.

These *nsese* roofs were the breeding places of all kinds of beetles, and at certain seasons their large larvæ or the beetles themselves would tumble out over the rooms. Lizards too would try to perform gymnastic exercises on the ceiling, lose their balance and fall flop about the place, sometimes into the tea, or soup, or dinner plate. I think they were more astonished than we were. They always seemed stunned for a moment and then as lively as ever. I never killed the house lizards, for they ate plenty of mosquitoes and other insects. Another drawback to *nsese* roofs is the constant anxiety about fire. To meet this danger we trained our lads to climb the roofs at a moment's call, and they would swarm over the roofs in danger and rub out the sparks that fell on the roof with their hands or throw the sparks to the ground.

The walls of the native huts were made wind-tight by putting mats of papyrus inside, then a thick layer of combed grass, and then the split bamboos outside and the whole tightly laced together.

Boring insects and beetles were driven away by the smoke, but the white ants played havoc with many houses, especially if they were left unoccupied for a time.

XIV. Fire.

Among their folklore stories are legends respecting the origin of fire. One legend has it that a man brought it from Libinza—a large district in the hinterland of Iboko from which most of the older men of Monsembe came to settle on the banks of the main river. The other legend runs thus: A man made a farm of plantains and bananas. Whenever he visited the place he found that bunches of his fruit were being stolen. One day he made an ambush to catch the thieves. Having hid himself he waited, and by-and-by he saw people coming down from above, and stealing his plantains. He ran out and caught one; it was a woman. He took her to his house and made her his wife. When she wanted to cook she found there was no fire, so she told some of her people to bring some fire with them on their next visit, which they did. Up to that time the people are supposed to have eaten everything raw. The woman stayed with the man who captured her, and induced many of her people to attach themselves also to him. Whenever she went out she told her husband not to open a certain basket; his curiosity was piqued and at last he opened it. On her return she accused him of disobeying her word, and without more ado she and her people returned whence they came. But they left the fire on the earth.

They could make fire by rubbing two sticks together, but the more common mode was by flint and steel. The flint and steel were undoubtedly imported, but the woolly substance that received the spark was gathered from the palm tree.

A lighted stick was the means used in taking fire from one house to another, and also from one family to another. If frequent sickness visited a house or family the fires were extinguished and a new fire started. Very often while living

at Monsembe women would come with a freshly laid fire in a saucepan, and ask me to strike one of my matches and light it for them. The idea at the root of thus extinguishing all the family fires and starting new ones was to procure a new lease of health by removing the probable cause of their bad health—a polluted fire.

I have seen fire used for purification in the following manner:—One day I saw an old woman whom I knew very well, sitting in the centre of a ring of fire, and upon inquiry I found that she had had much to do with preparing and decorating a corpse for burial, and at the close of the ceremony she was purified by fire being lit around her. In my unpublished dictionary of the Ngala language I have the following word and its explanation: "*tumbujela* (from *tumba*, to burn, consume), to purify by fire a person who has touched a dead body." A ring of fire made of small sticks, twigs and grass encircles the person, who takes a leaf, dries it, crushes it in the hand, and sprinkles it on the fire, moving the hands over the fire ring; when the fire dies down the *nganga* takes hold of the person by the little finger and lifts his or her arm (*amobili loboko*), and the person comes from the fire circle purified. This ceremony was also performed on anyone who had attended on a very sick person, and also on one to whom the moon was tabu.

Fires were seldom extinguished, as the morning fires were started from the embers left from the previous night's fire. If, however, it were necessary to extinguish them, the lighted embers were scattered and water poured on them, but as a rule the fires were allowed to die out.

Wood was the fuel most commonly in use, but there seemed to be no restriction on what they used; anything that would burn was acceptable to them.

There was one custom peculiar to the Bangala, and that was to cut down and carry in logs 8 feet and 10 feet long, with a diameter from 6 inches to 9 inches, and use them as the *pièces de résistance* for their outside fires. Three logs were placed stretching across the road, just outside their houses, so that the three ends met together, and between the ends they made their fire, and upon the ends they placed their saucepan. As the logs burnt they were shifted along until they were consumed. They formed seats for at least three persons who wanted to sit near the fire. Thus in passing through one of their villages you would have to be continually stepping over these logs. In 1893 to 1895, when we had a bassinet at Monsembe, the natives were always thoughtful enough so to arrange their fire logs that my wife could pass along with the bassinet without inconvenience or trouble.

XV. Food.

A few years ago I collected some two hundred different kinds of Upper Congo fish in the neighbourhood of Monsembe. These were ticketed, the native names supplied and sent to the Natural History Museum, Cromwell Road. The museum supplied the tanks and spirits for preserving the fish. I must, therefore, refer the reader to a book published by Mr. Boulenger on the fish collected by myself and others at that time. In addition to the volume there were also published fifty beautifully engraved plates of the fish.

The only fish that all the natives refused to eat was the *nina*, electric fish. Nearly all fish were tabu to one person or another, and in very rare instances I have known persons not allowed to eat any kind of fish, they were all tabued.

Elephants, hippopotami, crocodiles, monitors, buffaloes, antelopes, bush pigs, snakes (the large kinds), bush-cats, squirrels, dogs, goats, sheep, etc., were all eaten. Fowls, ducks, pigeons, and all kinds of wild birds and fowls were eaten as food, such as guinea-fowls, kites, falcons, fish-eagles, crows, hornbills, herons, plantain-eaters, parrots, etc.

Their vegetable food consisted principally of cassava called *ndembe*. Of this there were two distinct kinds, viz., the bitter that needed soaking before cooking, named *ndembe*, and a sweet kind which needed no soaking before cooking, and when steamed was equal to good potatoes; it was called *mponzu*[1] or *nkubu*. Under *ndembe* there were several sorts, as *mumbosi*, dark brownish stem, and green leaf; *Mokili*—tinted stalk and reddish leaf; *Bolonyonkolo*—very bitter, stunted growth, brownish leaf and stalk; *Mumponga*—pinkish stalk; *Lopoma*—stalk light colour, leaf light green; *Liwanga*—stalk brownish, leaf very light green; *Likaka ja nkema* (food of monkey)—light stalk, leaf very light green with red spot in the middle. These inadequate descriptions will not materially help anyone to decide their order, but they show that the natives have recognised that there are several kinds.

Besides eating the roots the natives also eat the cassava leaves. They also eat sweet potatoes (both red skins and white skins), yams (red and white), maize, palm-nuts, ground-nuts, plaintains and bananas, sugar-canes, and various wild fruits as the rubber vine fruit, kola-nuts, amomum, etc. The *munsansabu* was the only fruit tree occasionally cultivated in the towns before we went into the district. The fruit is shaped like a date, it has a large stone covered with a thin layer of pulp with a purplish skin; roasted or boiled the pulp is much appreciated by some white people and by all natives. It grows on a beautiful tree which has the same name as the fruit, and is known on the Lower Congo as *nsafu*. Wild fruits are gathered by anyone who wants them, but the *nsafu* tree always has an owner no matter where it may be growing.

The cassava most generally used was of the poisonous kind (*gatropha manihot*), called by the natives *ndembe* (the soft thing), from *lembe*, to be soft, pliable. I am very strongly of the opinion that it was of recent introduction among them. They had several modes of cooking and preparing the root, it was soaked in water for three or four days until soft, then peeled, cored and worked into a smooth dough, then rolled into long ropes or sausages about 2 inches in diameter and from 18 inches to 20 feet long. These "ropes" were wrapped in leaves and twisted round and round with twine, and well boiled in a covered saucepan. Prepared thus, it would remain sweet for a week, and was used for journeys or for "snacks" in the morning or afternoon, but never at a proper evening meal in one's own town. When in 20-feet lengths it was called *munsona*. Short thick "sausages" of

[1] Formerly known as *Manihot aipi*.

cassava were called *muntuka*. Another mode of preparing it was to cut it into thin slices and lay to soak all night, and in the morning it was eaten raw with a few ground-nuts as a "snack." This was called *munsaba*. Another preparation called *mumpampika* was to soak and peel it as above, then thoroughly dry it over the fire. In this way it would remain good a long time. When required it was soaked for three or four hours, and steamed in two saucepans as will be explained below. *Mumputa* was the name given to cassava pudding, soaked, peeled and worked into a dough ; it was boiled in the shape of a pudding.

The meal, practically the only real meal of the day, was the evening one, and every effort was made to render it as tasty as possible with the ingredients at the disposal of the woman cook. Cassava was the principal article in the *menu*, and for this meal it was commonly prepared thus : the roots were soaked and peeled as above, then cored and cut in halves and quarters according to size of root, then the pieces were laid on a strainer fitted into a large saucepan, one piece on top of another until there was a large pile, then one or two layers of plantain leaves were arranged over the pieces and another large saucepan was inverted over the whole, and put on the fire. In this way the cassava was not boiled but thoroughly steamed until cooked, and when taken off the fire it looked very white, like floury potatoes, and as appetising. This preparation was called *ndambe* from *lamba*, to boil, or steam. In the meantime a saucepan of fish or meat was being prepared, and if these were not procurable, then a saucepan of cassava leaves pounded with red peppers and mixed with palm oil was well stewed. The cooked cassava was dipped in the fish or meat soup or in the preparation of cassava leaves and eaten. The whole was washed down with water or sugar-cane wine, but usually with water as they preferred to keep their wine for drinking bouts. Most of the people washed their hands, mouths and teeth before and after eating. This was done by filling their mouths with water and squirting it out in a stream on their hands, then having washed their hands they put a finger in the mouth and rubbed their teeth with it, rinsed their mouths with more water, and they were ready to eat.

Large palm maggots, large bats, and certain kinds of caterpillars were considered delicacies. The most common way of cooking fish and meat was by boiling. The next most frequent mode was by stewing, and then the thick gravy was used to dip their cassava in; the next way was by skewering the fish or meat and broiling it over the fire ; another but uncommon method, was to tie the fish or meat up in some plantain leaves, having first put a little water in the bundle, and set it in a bed of hot embers. The water in the bundle was converted into steam, and before the leaves were charred through the steam had thoroughly cooked the food.

Milk was tabued by all and regarded with great abhorrence. Anyone drinking it was considered unclean for several days and was not allowed to eat with his family. They could touch milk, for they milked our goats and sheep, and carried it to us without suffering defilement, but it must not touch their lips.

A boy of mine was known to have drunk some milky water out of a glass, and he was not permitted to eat with his family for five days. They could give no reason for this, but only stated it was their custom.

The blood of all animals was caught when possible and boiled and eaten. They seemed to regard it as a delicacy.

Sweet potatoes were eaten by women and occasionally by boys, but never by men. An edible frog (*Rana esculenta*) was only eaten by women. It was named *lintalale*; they were caught in ponds and were said "to come down with the rain as they were found far from water immediately after a shower." Another edible frog was the *montoki*, but of this I never saw a specimen. With these exceptions all other kinds of food were eaten by all alike, and the restrictions were the tabus put on certain foods which different people had to observe for various reasons.

Kola-nuts were used as a pick-me-up after a drinking bout, and also the malaguetta pepper—*amonum granum paradisi*; the former—kola-nut—is used on the Lower Congo to assuage hunger on long journeys.

Before, and for some time after, the arrival of white men, salt[1] was made by the natives by burning two different kinds of vegetation. 1. The thick succulent stems of a grass[2] that grew in the water along the banks of the river. This was cut in large quantities and heaped along the bank until dry, when it was carried to the town. 2. A small plant (called *E. buti*) from 4 to 5 inches in diameter, with thickish leaves, no stem, rootlets coming straight from the leaves; leaves arranged as in the "rosette of *Plantago media*" (Henfrey's *Botany*, p. 44). This plant floats on the water in large quantities, being torn from the banks with every movement of the river. The process of manufacturing salt with either the plants or the grass was the same. A large quantity, say of the succulent grass, or grass and plants mixed, was collected on the bank, and turned over from time to time until dry, then it was carried to the town, heaped up and burnt to ashes. A large funnel was made of leaves, folded, and plaited together, and suspended from a stick. Into this funnel were put some of the ashes, and water poured on them. The water dissolved the greater part of the ashes and percolated gently through the leaves and dropped into a large shallow saucepan, where the moisture evaporated, leaving behind a dirty white granulated substance which was used and sold as salt. About a table-spoonful was sold for a brass rod = 1½*d*. I knew a semi-mad man who ate two rods worth of this salt and died in a few hours. I had my suspicions about his death until I saw a pigeon die through eating a very small portion of salt.

The food belonged to the woman who cultivated the farm, and while she supplied her husband with the vegetable food, he had to supply the fish and meat and share them with his wife or wives. If he had more than one wife, then the one who cooked for him on that day shared his meat or fish as he shared her

[1] Native names for salt, *monana* and *mokwa*.

[2] Called by natives *monkoko mwa njoku* = sugar-cane of the elephant.

cassava or maize, etc. If a woman sold anything from her garden the money was hers, and her husband had no claim upon it; he might borrow it, but he would have to pay it back like a loan from an outsider.

While they preferred food fresh, yet they did not disdain either fish, flesh, or fowl very high. They told me it was simply a matter of boiling it in many waters. I have known them to cook a rotten fish in twelve different lots of water to make it what they called "fresh." A fowl taken from the stomach of a python was accepted eagerly as food, and a goat bitten by a snake was taken away and eaten. Some years ago I was on a station where food was very scarce, and the only two milk goats left were killed by a python. The owner asked me privately about the matter, and as we were very short of food I advised that the viscera should be thrown away and the carcases eaten, which was done and no ill effects followed. I presume that the heat in process of cooking destroys the poisons.

The following folk-lore story will show how they regard any greediness about food:—

Mokwete had a large number of wives. He made a trap and snared an animal which he took to his town and told his wives to cook. When they had cooked the meat they took him his share and reserved a portion for themselves. He ate his meat, but it did not satisfy him. By-and-by he killed another animal, and he said to himself: "I kill plenty of animals, but get very little meat myself because my wives are so numerous." When he reached the bush near his town he disguised his voice and shouted: "Wives of Mokwete, wives of Mokwete." They answered: "*E!*" Then he said: "When your husband comes with meat you must not eat it, if you do you will die." He then picked up the animal and went on to the town. The women cooked the meat and brought it all to him. He asked why they had not taken any of it, and they told him what they had heard. He ate all the meat, was well filled, and congratulated himself on his ruse. He repeated this trick again and again.

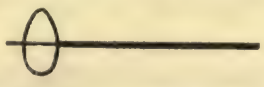
One day a boy went into the bush, and while there he heard someone coming, so he hid himself. In a little time the person arrived and threw something heavily on the ground, and he heard a voice say: "Wives of Mokwete, wives of Mokwete, when your husband comes with meat you must not eat it, if you do you will die." The boy looked out and saw that it was his father who was deceiving his mothers, and keeping him and the other children from having a share of the meat. He hurried home and told his mothers, and as they disputed his word, one of them went to look and saw that it was truly the husband who had been telling them not to eat the meat. She went and told the others and they decided to run away. They broke their saucepans, put out their fires, and fled, and upon reaching their various towns, they told their families why they had left their husband, and everybody justified them.

When a man buys a fish or a piece of meat he shares it with the wife who cooks for him that day. When they kill an animal they are expected to share it with all their wives.

Surplus supplies of meat and fish were dried over the fire. The natives were often away three or four weeks at a time on the islands fishing, and all beyond what was wanted for immediate use was thoroughly smoked on shelves placed over their camp fires. Large baskets of smoked fish were brought back, and that which was not required by the fisherman for his own needs was quickly sold in the village to those who for various reasons could not go fishing.

The principal drink apart from water was *manga*—sugar-cane wine. The canes were cut into about 2-feet lengths, and the outside skin peeled off. The juicy pith was put into a long, strong, canoe-shaped trough, where it was pounded into pulp with heavy pestles. By the side of the trough was a strong cross stick fixed to two stout uprights. From the cross stick was suspended by many loops a stout cord-plaited mat about 16 inches wide and 2 feet 6 inches long. At the lower end of the mat was a stout stick hanging by the loops of the mat. The operator took a large handful of the crushed fibre from the trough and placed it on the mat, he then gave a twist to the lower stick, folding the mat over on to the fibre, then with both hands he twisted the lower stick again and again until no more juice could be pressed from the enclosed fibre. The juice ran from the rope mat into a wooden conduit below (generally half of an old canoe) and on into a large jar at the bottom. This process was repeated until all the crushed fibre had been pressed in the mat. (Some years ago I saw a woodcut in a book that gave the above press as an Egyptian wine press. It was in a Bible Dictionary that I saw the cut.) This operation was generally commenced about 4 A.M. and finished about 8 or 9 A.M. A little old sugar-cane wine was added to the new, and by 3 or 4 P.M. the whole jar containing some 6 to 8 gallons of wine would be fermented. I have used sugar-cane wine as a ferment for bread making, and found it very good for that purpose. A jar of 3 gallons could be bought for 2 yards of calico, about 1*s.*

A man buys a jar of wine, beats his drum in a certain way to call his friends, who, after a few minutes, begin to gather from various parts of the town, each often followed by a wife carrying a stool and some article out of which he is to drink. One has a bottle, another a saucepan, another an old coffee pot, another a jug, another a glass or enamel mug. A man is chosen to dole out the wine. The bailer used is of wood, with a capacity of about half a pint ; it is fixed on to a stick thus :—



The majority drink in the ordinary way, but some drink in a manner peculiar to themselves. One draws his wine through a reed ; another has a cloth dropped over his head while drinking ; another places some fine-shredded grass over the mouth of his bottle and draws the wine through that ; another takes a part of a plantain leaf, makes a channel down the middle, puts one end into his mouth, and pours the wine out of his cup on to the top end of the leaf, whence it runs down the groove into his mouth. All these various modes of drinking are rigidly followed out of regard to the strict injunctions of some *nganga* = medicine man, who has told

them that in order to prevent the return of a sickness from which they have suffered or to escape some disease they must drink in such and such a manner or not at all.

When a man is "on the drink" he sticks a leaf in his hair to show it, and then no notice is taken of any stupid or insulting remarks he may make, or of any business transaction he may enter upon.

During the sugar-cane season drinking bouts were common and would last a week or ten days. Different headmen would buy on succeeding days large jars of *manga* and would beat their drums to call their cronies and friends to the "drink." They would sit round the sugar-cane wine jar, and one would deliberately and solemnly ladle it out, so many ladles to each receptacle, hence those with large vessels received no more than those with smaller ones. Men took such drinking vessels as they had, and no remarks were passed on the size or shape. I remember once seeing a man going to a drinking bout, his wife walking behind solemnly carrying a large white enamel chamber as the only suitable article they had as a drinking vessel. Women used to drink what their husbands gave them, but it was a very rare thing to see a woman drunk. I have only seen two or three. Drinking bouts were always followed by a certain amount of sickness, as fever and diarrhœa, and a complete loss of appetite for a time. I think the rough pieces of cane found in the unstrained wine irritated the bowels and brought on dysentery; and the irregular life they led during these drinking bouts induced fever.

Feasts were not held at stated periods. Sometimes a feast was given at a wedding, sometimes when a house was completed the owner would give a feast to those who had helped in the building of it; sometimes a feast was given on recovery from serious illness; sometimes after returning from a long absence; but there was no rule and what one did was not binding on others.

All the food was cooked together and then divided by the woman-cook into two lots, one for the males of the family and the other for the females. They never ate together. If stress of weather forced them to seek the shelter of a house, the males took one end of the building and the females the other end. The boys and girls would eat with either party, but as soon as they knew the meaning of sex they no longer did so.

Sharpened sticks bound together were used as forks and called *nkanya*. Spoons were carved out of wood, or one-half of a bivalve shell was fixed in a cleft stick and used as a spoon which was called *litoko*. Native knives went by various names according to size and shape. The most common form in ordinary use was a spear-point pattern called *mbele*. Saucepans were used as plates (see Pottery, p. 105). When European goods were introduced these names were attached to them.

They were most careful in the division of any meat or fish. Supposing a fish or animal had to be divided among say twenty persons. Two would be appointed who divided the meat into twenty equal lots, then the eighteen each took a share

one by one, and the last two shares left were for those who divided the meat, so it was to their interest to see that all the shares were alike or otherwise the small ones would be left for them.

Greediness was almost unknown among them. If you gave a boy a slice of bread or a piece of sugar or a little salt he would share it at once with the others standing round. There are several folk-lore stories that indicate their disapproval of gluttony in any and every form.

XVI. Cannibalism.

In 1890 cannibalism was very general right along the north bank of the Congo River from the mouth of the Mobangi River to the town of Likununga, forty to fifty miles above Nouvelle Anvers. It was the custom to eat those slain in battle, to buy slaves from the Lulanga River and other places on purpose to eat them, and to eat those also who by some criminal act had rendered themselves liable to the penalty of death. Slaves were dear, and bloody fights were infrequent, consequently the cannibal feast was one in which they could not often indulge. I could never obtain any other reason for eating human flesh than that "it is very nice and better than any other meat."

Early one morning in the spring of 1891 our Monsembe towns were attacked by some up-river towns. The attack was repulsed; many were wounded on both sides, and a few were killed. Those killed on the side of the conquerors were buried, although two or three of them were slaves, and those killed on the other side were carried off except one man, and he was quickly cut up and carried by our station. We saw the pieces being carried by while we were at dinner, and the gruesome sight badly affected our appetite for some days. That night there was a cannibal feast in the town, and in the morning some of our workmen brought the remnants of their share on our station; the cooked flesh looked like black boiled pork.

The people of the Bomuna towns, about a mile below our station, bought slaves to eat. The price of a goat was about 80 to 100 brass rods = 5*s.* 6*d.* to 6*s.* 6*d.* each, but a male slave cost about 600 to 700 brass rods = £2 to £2 7*s.* a piece. Such a prohibitive price as this would not allow them to gratify their desire for human flesh very often.

Towards the latter part of 1891, a man—a slave—in a neighbouring town threatened to kill the chief. He was caught, tied up, and his thighs broken to prevent his escaping. Then for three days the people were busy making sugar-cane wine. During these days they fed the man well. On the fourth day he was killed and eaten, and the wine drunk at the revelry.

I always took it for granted that the women shared in these feasts of human flesh. I never heard any remark to the contrary. One day I asked a lad if he had ever eaten human flesh, and he said, "No, he had never tasted it." When I expressed my doubts about his truthfulness he said, "Human flesh was tapu to my

mother, and is therefore tapu to me, that is why I have never eaten it." He gave me to understand that it was not tapu to all women and so they ate it. Hence I think they ate it when they had the opportunity.

In the early nineties there was no shame in admitting that they had eaten human flesh, but after a few years of teaching they were ashamed to confess to such a custom. Men whom I had seen eating human flesh later on denied ever having tasted it.

Although decayed corpses frequently floated down the river I never knew them to draw a single one ashore. They would at times go out in their canoes to look at the corpse to see if they could recognise the person, because the corpses that floated by Monsembe were from the towns immediately above. There were too many crocodiles for bodies to travel very far on the river.

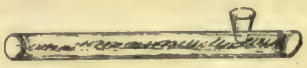
I do not think they regarded the eating of human flesh with any more concern than they did the eating of a goat. Deceased relatives were not eaten, and I have every reason to believe that they buried their own slaves.

There is a folk-lore story that a woman cut off her breasts on successive days, and cooked them for her lover when he complained that she only brought him a dinner of vegetables, whereas she should prove her love by cooking and presenting him with a meal of meat. Not having any meat by her, and not being able to procure any, she cut off one of her breasts and gave it to her lover to eat with his cassava. He showed such pleasure that on paying her a visit the next day she cooked the other breast and gave it to him. She sickened and died, and on removing her cloth they found the breasts were gone, and her lover confessed what she had done.

XVII. Narcotics.

Tobacco, called by the natives *makaiya*, was largely used by the men, but all the years I was there I never saw a woman smoking. Tobacco was cultivated in small patches in the towns, and when a man wanted to smoke, a leaf was plucked from the green, growing plant, carefully skewered and thoroughly dried over the red embers of the fire. When dried, the leaf of tobacco was well rubbed between the palms of the hands, and put into the bowl of the pipe, a piece of red-hot ember was put on the top, and then the smoker put the large end of the pipe stem over his mouth and took a prolonged, deep inspiration, filling his lungs and chest with the smoke, and finishing all the tobacco in the bowl at "one draw"; then the smoke was allowed to escape slowly from the mouth. Sometimes, but not often, a man would not finish the whole of the tobacco at "one draw," but, taking a deep inspiration, would pass the pipe on to his friend to finish. Pipes were lent very freely about the town, as very few men had their own. They were not great smokers, a pipe during the morning and another while sitting about talking in the evening would be about the extent of their indulgence. It was no uncommon thing to see a wife, or a son or a daughter, preparing the tobacco and pipe for the man's use.

The pipe stems were made of the horns of a large species of antelopes, and of buffalo-horns. The bowl was placed well up towards the tapered point, and was fashioned of clay and well baked. Sometimes the bowls were carved from the solid, hard kernels of the *nsese* palm (vegetable ivory palm). Now and again one would find the stem had been made of a hollow reed about 15 to 18 inches long and 2 inches in diameter. The stems were always filled with loose fine grass, or shredded fibres, through which the smoke filtered and cooled.



Snuff was compounded of tobacco and wood ash well powdered by rubbing between stones, and mixed. Very few used it, and those who affected its use rubbed it on the upper lip to allow the smell to ascend to the nostrils rather than drew it into the nose.

Hemp, called *mungulu*, was to be found in the towns occasionally, but was very little used.

XVIII. Hunting.

There were in the towns two or three men who were the recognised hunters, either because of their success, their swiftness of movement, their accuracy of aim or their daring courage. These men were the leaders in the hunt, and always received a larger share of the spoil than the ordinary men. The owner of the slain animal was he whose spear first entered a vital part, and, though the others would have a share according to their importance, yet he would take the largest portion for himself. Various relatives, headmen, and chiefs would have rights over certain parts of an animal killed by a relative, or a member of the town. These portions varied considerably with the different families and towns. A child takes a leg or a shoulder of the animal slain by his father, a mother receives the belly piece or the neck. The bespoke portions that belong to the family are called *bilelo* (sing. *elelo*). The chief or headman of the town received the head or a leg, and his portion was called *motando*. After the man had met these claims, and had given his companions in the hunt a piece each there was often not much left for himself. There is no close season for hunting on the upper river.

The boundaries of a town are well defined, and the islands belonging to a town are well known to all the other towns in the neighbourhood. If an animal is killed on ground owned by a town other than that to which the huntsman belongs he has to send a portion—generally the head—to the chief of the town that claims that ground.

The only mode I have observed among these people for preserving the meat is thoroughly to dry it or smoke it over a fire. As a rule not much meat is preserved in this way, as the animal is usually eaten all up in three or four days. Those who have more than they can eat are always willing to sell to the less fortunate, and buyers are numerous.

Men going to hunt have their special charms with them either carried on their person or fixed to their spears. These charms are as numerous almost as

there are men; you will scarcely find two men in a party having faith in the same charm.

In the case of a special hunt, say for killing elephant, an *nganga* is called who takes two or three days to perform an elaborate ritual and "make medicine." This only occurred once during my residence at Monsembe, and then the hunt was not successful. Although I inquired about what the *nganga* did they were too new to me to inform me about his proceedings. For small, ordinary, and impromptu hunts no ceremonies are performed beyond tying charms to the traps used.

For hippopotamus, elephant, and antelope spring traps are placed across their tracks. These traps are made by putting two stout uprights about 4 feet apart, one on either side of the track; then a stout cross-piece is fixed at about 12 feet from the ground. To the middle of this cross-piece and right over the track is fixed a heavy log of wood. Into one end—the downward end—is placed a strong, sharp, heavy spear or prong. The log is so arranged that when the string stretched across the path is touched by the passing animal down comes the log, and four times out of six the spear enters the body of the beast. I once saw the body of a man who inadvertently touched the string of one of these traps in passing beneath it. The spear caught him in the back of the neck, passed through his body and came out between his legs. Such traps were called *mbonga*.

Occasionally holes were dug and sharpened sticks and iron prongs were fixed upright in them, and then the holes were covered very lightly with sticks, leaves, etc. It was seldom that anything was caught in these pit-traps. I often shudder, even now after many years, at the narrow escape I once had while hunting from falling into one of these traps.

In hunting bush animals, hippopotamus and crocodile, the spear was the most common weapon used, and this was hurled with great swiftness and precision. I have seen lads stand at a distance of 80 to 100 feet and put spear after spear into an upright plantain stalk no more than 6 inches in diameter. For hunting smaller game as small antelope, coypu or palm rat, bush pig, and gazelle-like animals long string nets were used. These nets were placed in a semi-circle near where the animal was supposed to be, and then the hunters would carefully beat the bush, driving the game before them into the net.



Most of the hunting spears were light, with a small blade and thin shaft. Some had barbs. Guns were seldom used as powder was dear and scarce, and often there was only a flash in the pan, the noise of which frightened the game. My experience of the common flint lock guns made out of old gas pipes is that they cause more damage to the persons firing them than to the object fired at. More than half our hospital cases are gun accidents, the barrels bursting, or the guns unexpectedly going off and wounding someone.

XIX. Fishing and its Different Modes on the River.

A. By torches at night. Fishermen in twos and threes would light a bunch of grass or an old mat on a dark night and would walk quietly along the river's bank, holding the light well up with one hand so as to attract the fish, and having in the other hand a matchet or spear well poised ready to strike any fish that was attracted by the bright light. I never saw them catch a fish this way, but they must kill one occasionally, or they would not trouble to do it. This mode is common to all the peoples right along the river.

B. During certain seasons of the year—May and November—the Congo itself and its numerous large and small tributaries, inlets and creeks are flooded with the heavy rains. The watershed of the Congo River is extensive enough to benefit by the rainy season south of the line, and by that also north of the line; hence the two rises in the year—May and November. At flood times fences are built across the smaller creeks and streams. These fences are so closely woven that none but the smallest fish can pass. As soon as the water falls, which it generally does in six to eight weeks, those who have built the fences go and search the shallow water and mud for any fish that may have been shut in by the trap. In this way large quantities of various kinds of fish are caught, which, being cleaned and dried in the smoke over a slow fire, aid much in helping them to eat their sour cassava. During the time that the river is going down the people catch snails, and cut them up to feed the fish in these creek traps and also in any ponds and pools left on the islands by the receding river. At flood time many of the islands are 1 and 2 feet below water, and as the river recedes large pools are left in the hollows. These are claimed by certain people, who, as the water shallows, fatten the fish with snails and cassava parings, and in due time they bail the remaining water out of these pools and catch the gasping fish left on the muddy bottom. The mud fish and siluroids are caught in large quantities in these pools and ponds. Both these modes are common to the whole river above Stanley Pool.

C. On the Upper Congo, where the water is shallow and the banks slope gradually and regularly, the natives select a suitable place, drive in a number of wooden stakes forming a large semi-circle, the ends of which touch the bank at from 15 to 20 yards from each other. They then fasten long bamboo nets to the stakes, thus enclosing a large sheet of water. A number of light branches and leaves are loosely thrown over the surface of the enclosed water; the up river end of this fish trap is left open for the fish to pass in, where they find shade. Snails and cassava parings are cut up and thrown in to fatten the fish and induce them to stay. As the river rises more branches are thrown on the enclosed water, and the fish gliding along the bank enter, and are charmed by the cool shade they find there.

As soon as the river begins to fall below the top of the net the opening is shut. At this stage the natives frequently spear fish by probing with their fish-spears

among the branches and grass inside the trap. In a few weeks the river falls, and the branches are carefully removed, and a number of women and boys and girls enter the water with cone-shaped baskets about 2 feet high, 18 inches in diameter at the mouth, and 8-inch opening at the top. These they lift up and down in the water, placing the bottom firmly each time on the river bed, and from the feel they can tell if a fish is enclosed or not. They catch fish frequently in this way, and then put their hand through the top opening and grip it. If too large for that, then a spear is passed through, and the fish is pinned to the ground. Around the outside of the fence will be a number of canoes, occupied by men and lads fishing with large string nets fastened to stout canes of calamus palm. With these they spoon the water, and often bring up a fish. After a time the large bamboo net fence is slowly pulled up the sloping bank, sweeping before it and enclosing in its narrowing space any fish that may have escaped the spears, nets and traps, until it is drawn right up the bank. The whole scene is very animated, men, women, boys and girls—a score or more of them—laughing, jesting, joking most noisily, splashing each other, scrambling, swimming, kicking, fighting and diving in their efforts to catch the fish they feel gliding between their legs, or slipping through their fingers. They go as much for the fun as for the fish.



D. Fish hooks, probably first introduced by white men, are in general use all along the river. The hook is baited with cassava or earth worms or entrails of fowls. It is thrown into the river to lie on the bottom until it is found and swallowed by some hungry fish. I have seen fish weighing 20 lbs. caught in this way. The end of the line is a running noose placed round the angler's wrist. I once saw a boy about fourteen years old jerked off the bank into the river by a fish that had swallowed his hook, and then in a fright had suddenly started off. The boy, taken by surprise, lost his balance and toppled into the river; he and his fish, however, were soon pulled out.

Throughout the whole length of the river the natives used large cone-shaped traps made of split canes and bamboos. These traps varied in size from 6 feet to 10 and 12 feet in length, and from 2 feet to 6 and 7 feet in diameter at the mouth. The sides ran straight for two-thirds of the length, and then tapered off to a point. Inside were several partitions running in semi-circles round the sides and at an obtuse angle to them, so that it was easy for the fish to enter; but if they tried to get out the sharp irregular ends of the canes forming the partitions probed them and effectually turned them back. These large basket-like traps were weighted and dropped into deep water with their mouths up stream. They were inspected by their owners every day or two. All kinds of large fish were caught in them. Beyond the trouble of making them no other work was necessary than going under the water to inspect them. There are several of these traps sketched in the book on fish already mentioned above.

Fish-spears were of different shapes, but their hafts were always long—10 to 12 feet—and tapered towards the end. Sometimes the handles were of sticks and



sometimes of bamboo. The fish spear was often a simple prong, sometimes an ordinary spear shape; but the commonest form was the barbed, single or double, or triple. The two former were always tightly fixed in their handles, but the barbed kind was always detachable, having 2 or 3 yards of string loosely wound round the handle near the spear-head. This would allow the head to remain in the fish, and the handle to float and show its whereabouts. I think the only reason for this difference was that the barbed spear-heads were scarce and costly, and on account of the detachable handle they were not so likely to lose them.

Fish poisons were used. One was the milky juice of a leguminous, hairy, sensitive plant called *botoko*, which was crushed and thrown into the streamlets and creeks, and had the effect of partially stupefying the fish. The other was the juice of the euphorbia called *kokotulu*.

E. The *Libinza* people, to whom I have referred several times, make the largest nets and fish in a more business-like way than any tribe I have seen on the Upper Congo. Their nets are of a large mesh, and are made entirely of native string. In shape the net is like a box without a lid. It is 15 feet long, 8 feet wide, and 3 to 4 feet deep. This was a fair average size; there were many larger than this and some smaller. Soon after dark they select a suitable place—a sand bank with 3 or 4 feet of water on it. The net is fixed by one end, the two sides being tied to stakes. Having fastened their net, they form a wide semicircle at some distance from the untied end of their net, and at a signal they beat the water with their hands and feet, gradually working up to the open end and driving the startled fish before them. This operation is frequently repeated through the night, and as a result large quantities of all kinds of fish are brought to the town next morning.

F. The Basoko people have another mode of fishing, by means of a string net 30 feet long and 5 feet high. The two ends are fixed to sticks, along the upper edge are floats of pith wood, and along the bottom edge are weights of burnt fire-clay. The men go out in a canoe and at a likely place the net is unrolled and one man slips over the side of the canoe with one end of the net which, by means of the stick, he fastens upright in the rivers bed; the other man then jumps in with his end, and makes a wide detour—the floats buoying up one edge and the weights sinking the other. The second man having made as wide a detour as the length of the net permits, sweeps round the fixed end and winds the net loosely round and round, entangling in its mesh any fish caught inside the circle of its sweep. I have seen many fish caught this way.

G. The Bapoto people have another mode which appears very clumsy. A light frame of poles about 8 or 9 feet square is covered with a fine mat of bamboo laths closely woven together. One side of this frame is hinged to the side of the canoe so that it swings easily. The two upper corners of the frame have ropes attached to them. The frame is hinged to the side of the canoe and the two fishermen hold

it upright while a third paddles them into mid-stream; then the frame is lowered by the ropes until the top end is 12 to 14 inches under the water, and then the canoe is allowed to drift with the current. By-and-by a fish swims over the net, and the men, who are watching, pull at their ropes, up comes the net and down slides the fish into the canoe.

It is a curious fact that one tribe never imitates another in its principal mode of fishing. I have seen an Upper river native make and use a cast net such as he had seen our Accra carpenters use, but I have never seen a man of one tribe imitate a man of a neighbouring tribe in his peculiar mode of fishing. They have traps common to all, but each tribe has its own principal mode peculiar to itself. I have twitted a native of Monsembe about not following or even trying the successful mode of fishing pursued by the Libinza people, and he has replied, "We could not catch fish like them even if we tried; that is their way, and we have ours."

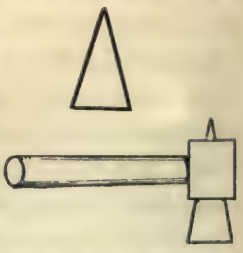
While a man is fishing, and immediately on his return from fishing, he is called Mwele, no matter who he may be. To call the fishermen by their proper names is to destroy their luck, and any person who does that is liable to a heavy fine, or is compelled to sell the fish of the luck-destroyed man at a very good price so as to restore the luck again.

The first-fruits of a lad's fishing are always, if possible, given to his relatives so as to ensure good luck. When this is not possible, then other fish are given later on. Very often, a share of the first catch of each season is given to the parents or relatives for the same reason.

A part of the fish caught is given to the head chief of the town to which the fisherman belongs. This is regarded as the perquisites of his position, and if not observed is bitterly resented.

XX. Agriculture and Farming.

Large farms were made around the towns. The men did the clearing of the bush, felling the trees, and cutting down the undergrowth: the women worked with them, heaping up the grass and brushwood ready for burning, and helping generally. As a rule, the women did the hoeing, planting and weeding, but the men did not so despise this work as never to do it. The men used a wedge-shaped axe for felling trees. These axes were fixed into wooden handles by making the narrow end of the axe red-hot and letting it burn its way through the thick end of the wooden handle. The hoes were like cheese-cutters in shape and were fixed in their handles in the same manner as the axes.



The principal article cultivated was the cassava. Next to that came the sugar canes, for making wine, then plantains, bananas, maize, sweet potatoes, and a few yams. See section under "Food," for full details of produce grown (p. 114).

Their mode of hoeing never allowed them to go deeper than 4 or 5 inches into

the ground, consequently a farm was played out after three or four seasons, and then it was allowed to lie fallow, another piece was cleared and hoed. Monsembe being so near the equatorial line, there was no regular dry season. Some years there was a break at one part of the year and sometimes at another. When a set of five stars called *kole* reached the meridian, the natives did more planting * than at any other season, because the rains, though infrequent, were then * * fairly certain. This set of five stars is in the constellation *Lepus*. The * * natives said it resembled a man—the top star being the head, the two lower stars the hands, and the two bottom stars the feet. When the *kole* travels from east to meridian there is not much rain; from meridian towards the west, frequent rains; when far down in the west there are plenty of rains and heavy. This was not our experience. We found the time of rains very uncertain. I took notes for some time of the rainfall and was often deceived, thus:—One year we had no rain for six weeks; next year I waited until that time was passed and then planted my vegetable seeds, only to have six or seven weeks of drought. During the six weeks in the second year it rained frequently, and then, thinking there would be no dry that year, I planted my seeds, and in a week there were no more showers for nearly seven weeks. *Kole* was so well recognised by the natives that we used it as equivalent for our word year. The first-fruits of a farm were generally given to the parents or relatives, otherwise bad luck would result from not following the custom.

Every woman had her farm, which was her exclusive property, and not even a fellow wife had any rights over it. Charms were placed around the fields to mark the boundaries of a farm belonging to one woman from that of another, and also to protect the produce from thieves. The charms used seemed to be almost anything, but the most frequently seen were large univalve snail shells, bivalve shells like mussels, pieces of euphorbia candelabra, pieces of rags, old calabashes, etc. These were all tied on sticks stuck into the ground.

Fences were often run along the bush and forest sides of the farm to shut out palm rats and destructive wild bush pigs. All the owners of the farms that benefited by such a fence would help to build it. Sometimes it was necessary to keep fires burning through the night and to have people sleep in the farms to drive off marauding animals.

The breed of dogs was very poor. Something like the fox terrier in shape and size, but with stand-up ears. They were poor spiritless curs that had to be drugged before they would lead in the hunt. They were not much used for this purpose, but were fattened and sold as an article of food. A dog well fattened would bring from hundred to hundred and fifty brass rods. They were fond of dogs and also of dogs' flesh. I remember meeting a woman crying very bitterly because her dog had been killed by some neighbours for intruding into a coffin-maker's enclosure. A day or so afterwards I met her again, and asked her what she had done with her dog. "Buried it," she said. "Where?" I asked. "Here," she replied, touching her stomach.

Cats were to be found, and a person here and there would eat them, but they were not numerous and their flesh was not regarded as a dainty. The fowls were a poor breed, small and flavourless, the result, I suppose, of much interbreeding through many generations. They had goats and also sheep with horns like goats, probably through interbreeding with goats. The sheep have hair very much like goats' hair. The meat is small and poor.

XXI. Education.

Lads accompany their fathers and elders on their fishing and hunting expeditions, and learn by imitation, by listening to the talk around the camp fire, and by instruction. Most lads of fourteen to sixteen know the names of the fish in their river and creeks (and there are quite three hundred kinds of fish), their habits, and the best mode of catching them. They also know the names and habitat of most bush animals either by experience or repute; the names of birds, insects, trees, plants, etc., are all well known to them and easily distinguished. Boys and girls of a tender age will know all about sexual intercourse, pregnancy, and child-birth. In these matters they are very precocious. The village life is so open, so lacking in privacy, that almost every function of the body is performed without any attempt at secrecy, hence observant young eyes drink in all they see.

"Doctors" are generally those who have had some bad sickness and have recovered from it, hence a "doctor" very seldom treats more than one disease and his fees are small. Witch doctors treat all diseases by their charms, incantations, etc., and their fees are much higher. They sometimes receive instruction from other witch doctors, but their fame, and consequently their wealth, depend upon their own craftiness and power to gull the people. Half-daft persons, and those who had recovered from insanity, were treated with much fear, and often spoken of as *nganga* of much power. Such as were dangerous were quietly and secretly killed in some way. Silly people were treated with indifference, and sometimes with ridicule.

It was no uncommon custom for the people of a village to hire a dancer or a singer to come and teach them new dances or new songs. They paid a fixed price for their instruction; those learning the song or dance paid the amount among themselves. The new tune would be all the fashion for a few weeks, when it would take its place as an ordinary tune.

There were but few games, but few as they were they trained the eye in quickness, the hand in precision, and the body in agility. Sham fights with sides were a common amusement. The boys plaited their own shields; and for weapons the stalks of small plantain and the stems of a thick water grass were used as clubs and spears. Imitation wooden knives were used. Such sham fights were interesting to watch, for the movements of the more than half-naked bodies were swift, precise, and graceful, and undoubtedly helped to keep them in good form.

Swimming and diving were indulged in, and sometimes they would get up among themselves races on foot, or in canoes on the river, and contests in spear throwing at some fixed object such as a plantain or banana stalk.

XXII. Mental Powers, etc.

During my more than twenty-five years' teaching of the Congo natives, both on the Lower and the Upper River, I have noticed that up to the age of fourteen and fifteen, the boys and girls—especially boys—are very receptive, and easily taught; but after that age comparatively few make real advance in learning. After the age of fourteen or fifteen they have to make a continuous effort to retain any book knowledge they may have received. This may be due in some measure to their thoughts being centred on other matters, as trade journeys, fishing, and hunting on their own account, and later on building their houses and looking about for a wife, and procuring the necessary articles for paying the marriage money and meeting the expenses of the feasts, etc.

I have also thought that the following is a great factor in causing their mental growth to practically stop at the above age. For generations boys on arriving at the age of fifteen had learned all their fathers had to teach them respecting fishing, hunting, wood-craft, building, paddling, and women. If they showed a special aptitude for fishing, hunting, etc., they followed their "bent" in that particular, and simply became proficient by practice, and their successes were generally put to the credit of their charms. They never initiated new ways of building (until after the arrival of the white man), or new ways of hunting, or fishing, etc., but only carried on those modes they had gained from their fathers, and which were mastered by the time they were fifteen years old. Thus their intelligence has attained, for generations, its fullest development by the above age, and now we have to help them over that crucial stage. In some cases it is very difficult, but in other cases we can do so, and in such cases there is no limit to the intellectual progress they may make. In many instances they have mastered a good working knowledge of French, Portuguese, or English, both spoken and written.

The native in his raw state often gained such an acquaintance with the languages of neighbouring tribes as to be able to communicate freely with them; and in many of their folk-lore stories there are sentences taken from other languages and scattered through their tales like French phrases in a fashionable novel.

We have found as a rule that lads who come to us at fifteen or sixteen make very slow progress in our schools, and scarcely ever reach our higher classes. They lose heart at their difficulties and leave the school. There are exceptions, but such only go to prove the rule.

When the natives of Monsembe had the opportunity of buying or using our tools, they made doors, windows, sashes, and houses large and permanent in imitation of ours. Furniture, such as tables, chairs, bedsteads and cupboards, they

also made like ours. They cut out cloth and sewed and machined trousers and jackets in imitation of those we wore. Their only limitations were materials and tools.

Their memories were exceedingly good respecting the debts owing to them, but with regard to the debts they owed, they had, or pretended to have, very bad memories—it was for the creditor to keep in mind the debts owing to him. Their memories were also exceedingly good concerning the names of all natural objects around them. They have names for the numbers ranging from 1 to 10,000 (see "Arithmetic"), but these were only used in trading and when they want to be precise. In general talk, say about a flock of birds, they would say: "Many-many," or "Hundreds and hundreds," or, of a very large flight of birds—"Thousands and thousands." It was rarely that they used a number higher than 10,000, as their trade in brass rods took them seldom if ever beyond that figure.

There were a few cases of insanity while I lived among them, caused in some instances by uterine trouble, and in other cases being a resultant phase of sleeping sickness. If the insanity was of long duration and the patients destructive and troublesome, they were quietly put out of the way.

I only met with one man who ran amok. He had had a serious illness, and either the illness or the decoctions given him to effect his cure made him temporarily mad. He cut down all the plantain trees in his path and destroyed everything in his way. People cleared out of his road, but being a man of importance he got off without any payment of damages.

I should not consider them very good trackers. I very often hunted with them, and after a short time was able to track the game as quickly as they. They never went tracking like the North American Indian, but simply for a mile or two round their own towns. Undoubtedly, the various chiefs owning the land, and demanding certain parts of the animals killed on their land, restricted the tracking and hunting to small areas, and consequently their tracking instincts were not developed.

When I went first to live among the people of Monsembe I had with me a roughly-bound volume of the *Illustrated London News*. It was very interesting to watch the development of their artistic faculties. At first they looked at a picture and asked what the marks were. They held the picture anyhow and looked at it from any point that might be convenient to them without any regard to the picture being right side up, or up-side down, or any other way. By-and-by they began to pick out the nose, eyes, mouth, etc., and say: "Why, it is a man!" They would pick out the doors, windows, walls, etc., and say: "Why, it is a house!" After a time they would drop this spelling out, as it were, of the picture, and say: "A man, a woman, a house," etc., at once. Later on, they would take in the whole of the picture at a glance. I suppose the above is the way we learn pictures in our childhood—spell them out. It was interesting to watch the same process in young men and women, and adults.

The native has an immense respect for force, but totally despises gentleness.

He likes to be treated with kindness and consideration, but instead of regarding such treatment as an expression of your goodness he considers it a sign of your weakness, and will behave accordingly. If you point out to him that you treat him with kindness and expect some consideration in return, he will acknowledge that that is fair and right, and will for a time try to act more thoughtfully, but soon the better feeling will pass away unless you constantly remind him of who and what he is, and who and what you are. To teach a native that he is your equal in all things is not to incite a desire on his part to emulate you, but rather tends to cause him to regard you with disrespect and contempt. The native knows he is not your equal, and he thinks you must have a despicable twist in your vision, and some bad ulterior motive, if you think that he is your equal, and wish him also to believe the same. I teach him that he is a creature of God as I am, and that the Redeemer died as much for him as for me, and that God will judge him righteously and will show neither of us favour or disfavour on account of the colour of our skins. At the same time I point out to him that morally, intellectually, and socially he is my inferior, and that before he can take his place beside me he must rise out of his superstitious degradation, control his lusts, govern his passions, and strive after all that is noble and beautiful in God's Book. He will admit that you are his superior in every way, but unless you firmly insist on it he will conduct himself towards you with less respect than he pays to the smallest and poorest chief in his district, and in a short time your influence will be gone and you will wonder why.

Treat the native with respect and insist on receiving the same from him, treat him with firmness, decision, masterfulness and he will go, as a rule, as far as you want him to go. Faithfully keep all promises, and fulfil all threats, therefore never make a promise you do not intend to keep, and never threaten a thing you are not able, on the face of it, to perform, *i.e.*, treat the native with gentle firmness, persuasive force, and masterful consideration, and you will get the best out of him, and cause him to respect himself while respecting you.

The native can love, and he can hate, but he is neither a good lover, nor a strong hater. His affections are neither steady or permanent. He will, however, remember a wrong committed against him much longer than a good deed done to help him. If you are powerful he will effusively smile on you a week after you have unmercifully thrashed him, but if you are a nobody he will scarcely greet you the day after you have saved his life. He is moved more by fear of pain, by loss of material profit, and by public opinion than swayed by principles and arguments. He will float with the stream rather than continually struggle against it, but at the same time he can obstinately and doggedly follow a course that will result in physical pain, material loss and ridicule if he is once persuaded that his ultimate interests lie in that direction.

He is not altogether lacking in gratitude, but he is afraid of displaying it lest a favour be asked of him in return. When you visit him he may remind you of the fact that you mended his broken leg, or cured his disease, not to make it the basis of a

generous act towards you, but rather as a plea to get something extra out of you by awakening your further interest in him.

In some districts you will find he is more a liar than a thief, and if you investigate you will discover that the fines imposed for thieving are such as to deter him considerably from following his inclinations to steal. In other districts, where the laws are more lax, he will excel both in thieving and lying, but he will readily admit they are vices worthy of stringent punishment, and will express his regret that the thief stole either from you or himself, and at the same time he will be doing his best to rob you.

Before the unknown and mysterious he is timid, fearful and very superstitious. He will regard you as a *god*, and yet try to fight you: he will superstitiously believe that you have wonderful occult powers that can stop the rain, cause pestilence, and plagues, and yet he will not attempt to conciliate you, but he will savagely tell you to clear out of his town, and take your witchcraft elsewhere. When fighting with a gun he is timid, nervous, and apparently very cowardly, because he does not understand the mysteries of gunpowder, but give him a shield and a spear and his bravery is evidenced by his boldness in a fight and his utter indifference to wounds and death. The mysterious overawes, paralyses him, but superstitious fears will often arouse the demon of cruelty and vindictiveness, and incite to boldness and recklessness.

He lacks reverence, but is easily filled with awe and overcome by wonder. The stars in their courses make for him no song around the eternal throne, but the smoke ascending from his great bush fires forming a halo round the sun will make him quake with fear because it is an omen of evil. The movements of the sun and the moon awaken no admiration in him, but exhibit some poor conjuring trick, or a shilling mechanical toy, and his eyes and mouth are not big enough to express his wonder.

He is prouder than Lucifer is reputed to be, and will resent the smallest slight put upon his so-called dignity. In a fit of overweening vanity he will sacrifice everything he possesses, and destroy all his future prospects to satisfy the pride of the moment. His family may be insignificant, his town paltry, himself small and dirty, but touch his pride and he will act as though he were *un grand seigneur*. He himself must be the judge of what hurts his pride, not you. He has his own code of honour and etiquette, difficult at times for you to understand, hence you wonder at some of his exhibitions of pride.

His memory is well trained, and his powers of observation keen, minute; his ability to adapt himself to his surroundings is wonderful, and his imitative faculties are remarkable, but he lacks powers of mental concentration, and logical thought. His physical powers are highly developed, he will carry a heavy load, from 70 to 80 lbs., up and down hill, and across broken country hour after hour, but he will not or cannot follow a line of thought, metaphorically speaking, 20 yards. His reasoning and reflective faculties are stunted, undeveloped, for they have been exercised upon nothing more profound than the alphabet of existence. He knows that two and

two make four—that certain results follow certain causes, but that a series of causes will produce a series of results complicated and wide-spreading in their effect he cannot grasp. He has no power of deduction, and little or no faculty for producing a well-developed plot or involved plan.

With those who have a right to a share of meat, or cloth, etc., he will be most scrupulous in dividing the article into equal portions, forgetting no one, but to those who have no right to a share he will be niggardly, mean, selfish, and grasping. His apparent generosity is innate selfishness, for he only gives that he may receive more in return, and be the giver black or white he will complain bitterly if the return present is not so large as his greed imagined it should be. Perhaps this trait in his character may be accounted for by his desire to have a grand funeral—the talk of the village or the country side. For this he will save and scheme, lie and steal, rob his neighbours, his wives, and his children to hoard up cloth, etc., for his own burial.

He has a wonderful power of imitation, but he lacks invention and initiation; but this lack is undoubtedly due to suppression of the inventive faculty. For generations it has been the custom to charge with witchcraft anyone who has commenced a new industry or discovered a new article of barter. The making of anything out of the ordinary has brought on the maker a charge of witchcraft that again and again has resulted in death by the ordeal. To know more than others, to be more skilful than others, energetic, more cute in business, more smart in dress has always caused a charge of witchcraft and death. Therefore the native, to save his life and live in peace, has smothered his inventive faculty and choked all initiative skill.

His needs are few and easily supplied, but notwithstanding this drawback to industry he is not lazy. Hire him for a year at so much per month and he will do no more than a white day labourer, *i.e.*, not more than he can help. He works for a year, and at the end of his term he receives his pay and returns to his town, where in eight cases out of ten his pay is taken from him by the eldest of his family, or by the chief of his town, or by his master if he is a slave. Knowing this beforehand, what incentive has he to industry? Visitors will sometimes find him lounging about the town, and thoughtlessly condemn him as lazy, whereas four times out of five, if they inquired, they would find he is resting after a long bout of arduous work. He may have just returned from a trading journey lasting three to four months, during which time he has had rough sleeping places, insufficient food, and difficult roads to traverse; or he may have returned only yesterday from a fishing expedition, sleeping in rough shelters for three months, isolated from his fellows, and fishing during the night as well as the day so as to take advantage of the season; or it may be he has just returned from his twelve months' engagement for the white man, and his pay has been taken from him on one pretext or another, and the only way he can now get any compensation for his year's work is to live for a few weeks on those who have robbed him of his money. They have "eaten his pay," he will now eat their food. Or, he may have been away for months

making a large canoe which he has finished, and it is now floating on the river, and he is resting before he commences another, and in the meantime he is trying to find a buyer. Then again he may be well to do, and have no need to work. His father or uncle may have been a keen trader, and has left his heir sufficient to live upon. If he were an Englishman he might be showing the soles of his boots in a Pall Mall club window, and be called a "gentleman," but being a native of Africa he smokes under his own shade tree, and is called by the ignorant a "lazy nigger."

Give him "piece-work," and above all a guarantee that he will enjoy the fruit of his labour, and you will see him work as I have seen him—equal to any white man doing *piece-work*. Much more might be said in his favour on this matter, but I refrain with this observation: That very few day labourers, the world over, *satisfy their employers* with the amount of work they do in return for their day's pay. Most white men in Africa are employers of the black man's labour—the conclusion is obvious.

In the above sketch I have generalized and have not allowed for exceptions that are always to be found to every rule. Anyone who has lived among the natives and has known them intimately will supply examples of those who were kind, generous, grateful, of others who were affectionate, devoted, unselfish, and again of others who were patient, brave, faithful and persevering; but these exceptions show that they are capable of being possessed by the noblest virtues and swayed by the highest and purest motives. Generations of superstition and moral degradation have not entirely obliterated from among them examples of kindness of heart and generosity of feeling, and these examples assure us that with proper care and cultivation such virtues and graces may become more widespread. Those of us who teach the native in the workshop and the school find through stirring up his moral and mental depths many undesirable qualities coming to the top, and those we repress, but on the other hand pleasant traits exhibit themselves and those we try to cultivate. The beneficial results may not be obvious to the unseeing eye in the first generation, and perhaps not in the second, but they will manifest themselves in due course. The civilisation of England is the outcome of a thousand years' teaching and training, and you cannot expect us to attain the same results in a generation or two. It is unfair of those who boast of their "superiority" to criticise us for not accomplishing in a generation with "inferior" material what it has taken a score of generations to accomplish in their own case.

THE NGOLOK-WANGGAR LANGUAGE, DALY RIVER, NORTH AUSTRALIA.

By Sidney H. Ray, M.A.

The material for the following short grammatical note and vocabulary is derived from notes taken during an interview with the Rev. Father Conrath, of the Roman Catholic Mission on the Daly River. During a few hours' stay at Port Darwin, in 1898, on my way from Torres Straits to Hong Kong, I called at the Mission House and Father Conrath kindly gave me the information embodied in the note. No specimens of the language had previously been written, but since my return the Rev. J. Mathew, in his book, *Eaglehawk and Crow*,[1] has published a vocabulary which was derived from a member of the same mission and appears to represent the same language. There are, however, numerous differences both in the meanings given and in the spelling.[2] Most of the words which are here given were written by Father Conrath himself. He called the language Ngolok-Wanggar. Mr. Mathew names that given by him, Daktyerat. In his work on the *Linguistic Relations of German New Guinea*, Pater W. Schmidt quotes some examples from an Australian language south-west of Port Darwin,[3] which also appear to illustrate the Ngolok-Wanggar.

Grammar Notes.

1. Phonology: Vowels: *a, ä, e, i, o, ö, u, ü,* as in German. Consonants: *b, mb, ch, d, nd, dy, g, k, l, m, n, ng, ngg, ny, p, r, t, th, ty, v, w, y.* The combinations *rr, rk, lk, rm, ly, rb,* are frequent.

2. Nouns: There is the appearance in the nouns of a four-fold gender, distinguished by means of a prefix. Examples given are: *yinelli,* a big man;

[1] *Eaglehawk and Crow*, by John Mathew, London and Melbourne, 1899. Comparative Table, pp. 205–272.

[2] Some words in Mathew's Daktyerat are quite different, as, *e.g.*, (1) *anbulk*, sky; (2) *wurrurk*, wind; (3) *wulu*, stone; (4) *mürmallo*, old woman; (5) *ngaolu*, father; (6) *gnagnaain*, mother; (7) *bulk*, children; (8) *dugur*, fish, which are in Ngolok-Wanggar respectively; (1) *enmel*; (2) *beberma*; (3) *arri*; (4) *barmat*; (5) *babo* or *bayang*; (6) *viya, viyang*; (7) *alalk*; (8) *dä*. Other words are nearly the same as, *e.g.*, (1) *miru*, sun; (2) *mark*, cold; (3) *tyungo*, fire; (4) *wawk*, water; (5) *anduk*, house, which are in Ngolok-Wanggar, (1) *miri*; (2) *dumurk*; (3) *tyung*; (4) *waok*; (5) *undug*. Only two words are absolutely identical in the two vocabularies. These are: *mada*, rain, and *nga*, I.

[3] P. W. Schmidt, S.V.D., "Die Sprachlichen Verhältnisse von Deutsch-Neuguinea." Contained in *Zeitschrift für Afrikanische, Ozeanische, und Ostasiatische Sprachen*. Jahrgang v, Heft 4, und Jahrgang vi, Heft 1. Berlin, 1902; *cf.* p. 104.

nunelli, a big female; *wunelli,* a big thing; *munelli,* vegetable food. Also *cf. yinet, wunet,* bad.[1]

The plural of nouns is formed by reduplicating the first syllable, as *bulit,* master; *bubulit,* masters; *barmat,* old woman; *barbarmat,* old women. The plural is also shown by the word *mura* following the noun; *mechama mura,* brothers; *undug mura,* houses.

Nouns are declined through a variety of cases by means of suffixes.

The genitive or possessive is shown by the suffix *nö*; *babonö,* of the father; *undugnö,* of the house. In the plural, *wörö* is suffixed instead of *nö*; *undugwörö,* of the houses. A genitive is also shown by simple juxtaposition; *pondo undug,* roof (of) house.

The accusative is indicated by *nö* following the verb: *babo aiaia nö,* (I have) beaten the father. In the plural, *wörö* is used for *nö.*

The instrumental has suffix *vang*: *undugvang,* by means of the house; *babovang,* by the father.

The dative indicating motion towards is shown by the suffix *an undugan,* towards the house.

The ablative indicating direction from, or origin, is shown by the suffix *main*: *babomain,* through or by means of the father; *undugmain,* from the house; *wunetmain,* from evil.

There are three locative suffixes, *na* meaning "in," *ingga* or *yingga,* meaning "at the place of," and *yen,* meaning "in the company of"; *undugna,* in the house; *unduginggа,* at the house; *enmelyingga,* in the sky; *bauorkyingga,* on earth; *baboyingga,* at the father's place; *baboyen,* in the company of the father.

The suffixes are sometimes combined: *unduginggamain,* from the house hither.

Some nouns have variant forms: *babo,* father (in general); *bayang,* my father (when addressed); *banga,* my father (when referred to in conversation). So also *wiya,* mother; *wiyang,* mother (vocative) and *wiyanga,* my mother (in reference).

3. ADJECTIVES:—Adjectives may be formed from nouns by the suffix *yen* (cf. locative case of nouns); *dauotyen,* bloody; *waokyen,* watery.

4. PRONOUNS:—Pronouns distinguish the singular, dual and plural number, with inclusive and exclusive forms in the plural of the first person, and indicate gender in the third person. I did not obtain all the forms.

Singular: 1st person, *nga,* I; 2nd person, *wungare,* thou; 3rd person, *yündön,* he; *nündön,* she; *wündön,* it.

Dual: 1st person: *yenggi,* we two; 2nd person, *nungut-verena,* you two.

Plural: 1st person including person addressed, *yergeta,* we and you; excluding person addressed, *yauota,* we, not you; 2nd person, *nungut,*

[1] Mathew gives the similar words: *yidello,* big man; *nudello,* big woman; *wudello,* big thing; *mudello,* a big object of any gender. *Op. cit.,* p. 162.

you. The 3rd person, plural, is formed by adding *wörö* in the accusative case.

In the 3rd person, the prefixes *yu, nu, wu,* are the same as those used with nouns. In the 2nd person, dual, *verena* is the numeral "two."[1]

These pronouns are declined like nouns, but I did not obtain a full list; *yauotnö*, is "our."[2]

5. VERBS:—The root of the verb is a kind of past participle, and varies to indicate shades of meaning, *thorp*, cut, *ngack*, eat vegetables, *larack*, eat meat.

There are two kinds of reduplication. Reduplication of the whole root indicates continuous action; *thorpthorp*, make one cut after another. Reduplication of the medial syllable indicates repetition; *thororp*, cut several pieces.

The number of objects acted upon is shown in dual by prefixing *nga*, in the plural by changing the initial syllable to *wa*; *ngackma*, eat one; *ngangackma*, eat two; *warackma*, eat many.

I have only two examples of tense endings; *ma*, indicating what is customary, and *wa*, indicating the past. Examples are: *datma ännö nunno*, (I) see while (I) sit; *datma annowa nunno*, I saw while I sat; *äyö*, I continue to see; *ayowa*, I continued to see. In Mathew's vocabulary many verbs end in *-dema, e.g., waadema*, take; *taueradema*, tell, etc. This *ma* may be compared with *ma* of Macdonnell Ranges in Australia.[3]

6. NUMERALS.—The only numeral obtained was *verena*, two.[4]

7. SPECIMEN.—Father Conrath wrote for me the following version of the Paternoster.

Bayama yauotnö enmelyinnga nünnöwa wani tyegnyurwünyung. Ne wungare. Bullityen nünnöna kawun bong; nung wungare tyegnyurwünyung nen bauorkyinnga ngan enmelyinngaman. Mi yauotnö angyürö emmen pana tityi angyürö marinelli yauotnö ngan yauot mannen tityiang mattö wörö marinengi virmin yürö, aning auot körörma nündöma yürö pöt köranga yinngana pana perer yürö wunetmain. Nanna anda.

[1] In Pater Schmidt's work already referred to (p. 104), he gives the pronouns of the language "South-west of Port Darwin," as follows:—

1st	person,	singular,	*ā, nga*	: dual,	*nganu*	: plural,	*yavöth.*
2nd	„	„	*nun, nu*	: „	*nungoth*	„	*nungöth.*
3rd	„	masculine, singular,	*yi, i*,	dual,	*yogoth*,	plural,	*yogöth.*
3rd	„	feminine,	„	*nin*,	„ *nogoth*	„	*nogöth.*
3rd	„	vegetable,	„	*mun*	„ *mogoth*	„	*mogöth.*
3rd	„	lifeless,	„	*vun*	„ *vogoth*	„	*vogöth.*

[2] The pronouns here given differ considerably from the Daktyerat of Mathew. He gives—Singular, (1) *nga*; (2) *nun*; (3) *yundon.* Plural, (1) *auur, ergur*; (2) *nungur*; (3) *wurundun.* The possessives are formed by suffixes, *ve, be* or *de*; (1) *ngave*, my; (2) *nungbe*, thy; (3) *yundunde*, his. Plural, (1) *auure, ergure*, our; *nunguro*, yours; *wurundunde*, theirs. He gives also Objective forms: Singular, (1) *erin*, me; (2) *nundyu*, thee; (3) *ne*, him; Plural, (1) *erpuro, erguro*, us; (3) *wuru*, them.

[3] Rev. H. Kempe, *Transactions of Roy. Soc. South Australia*, 1890-91.

[4] The Daktyerat numerals of Mathew are: (1) *yaunuka*; (2) *verenuka*: (3) *wirittyauen.*

NGOLOK-WANGGAR VOCABULARY.

(Mathew's Daktyerat in square brackets.)

1. Natural Objects.

Sun, *miri* [*miru*].
Moon, *yelk* [*yuilk*].
Star, *nümöröl* (*cf.* eye) [*numurul*].
Sky, *enmel* [*anbulk*].
Wind, *beberma* (is windy) [*wurrurk, wind*].
Rain, *madda* [*mada*].
Fire, *tyung* [*tyungo*].
Smoke, *wen* [*arabul*].
Water, *waok* [*wawk*].
Sea, *ngambait.*
Sand, *yulboin.*
Earth, *bauork* [*wöndyö*, ground].
Stone, *arri* [*wulu*].

2. Animals.

Bird, *dä* [*balbalma*] [*dyur*, swan]
Egg, *dyirmin.*
Crocodile, *yingi.*
Fish, *dä* [*dugur*].
Shark, *dyayö.*

3. Parts of the body.

Head, *pondo* [*pondo*] (*cf.* roof).
Face, *milk* [*bebema*] [*milk*, forehead].
Hair, *pondo-mat* [*pondomer*].
Eye, *numaro* [*numuru*].
Ear, *dyauel* [*monindyaur*].
Nose, *yinnin* [*yinun*].
Mouth, *ari* [*aru*].
Lip, *ari-ngalyil* (mouth-skin) [*aru*].
Tooth, *diid* [*dir*].
Neck, *menyök.*
Arm, *wurro* [*wuru*].
Hand, *nanyilk* [*nanyulk*].
Belly, *men* [*mandulma*, stomach].
Leg, *tyet* [*kalar*] [*tyer*, thigh].
Foot, *madyan* [*mel*].
Blood, *dauot* [*padawo*].
Bone, *mörret.*
Skin, *ngalyil* [*karalla*].

4. Persons.

Man, *yinya* [*wunwa, papa*] [*gnan*, black fellow].
Woman, *aloer* [*wundinigmun*] [*elugur*, black woman].
Old woman, *barmat* [*mürmallo*].
Father, *babo, bayang* [*ngaolu*].
Mother, *viya, viyang* [*gnagnaain*].
Child, *alalk* [*bulk, children*].
Brother, *mechama* [*pukang*, elder, *nundang*, younger].
Master, *bulit.*

5.

House, *undug* [*anduk*].
Roof, *pondo* (*cf.* head).
Spear, *kolmin, belmöt, wanngo* [*daruk*, wooden spear; *mokalin*, reed spear].
Throwing-stick, *yarrua.*
Bread (introduced word), *pana* (Latin, *vanis*).

6. Verbs.

Eat (animal food), *larack* [*lakadema*].
Eat (vegetable food), *ngack* [*lakadema*].
Drink, *dork* [*durkadema*].
See, *dat* [*dukadema*].
Sit, *nunno* [*adini*].

Strike, *tait* [*eadema*].
Beat, *aiaia*.
Cut, *thorp*.

7. Adjectives.

Bad, *yinet* (person), *wunet* (thing) [*yinetto*].
Good, *wunbain* [*yunbain*].
Alive, *yididinyen* [*karalla*].
Dead, *ngirkelli* [*muruneka*].
Large, *palbal* [*yidello*].
Small, *dirk* [*yigbelderang*].
Hot, *lerbma* (is not) [*poiyadu*, heat].
Cold, *dumurk* [*mark*].
Clean, *lengak*.
Black, *eigeig* [*eyukeyuk*].
Red, *minma* (is red) [*witma*].

NOTES ON THE WILD TRIBES OF THE ULU[1] PLUS, PERAK.

By Fred. W. Knocker.

[With Plates XIII and XIV.]

The Ulu Plus district extends into a practically unexplored part of the British protected state of Perak, towards the boundaries of Kelantan and Pahang. Actually the source of the river has not yet been definitely located. (Fig. 1.)

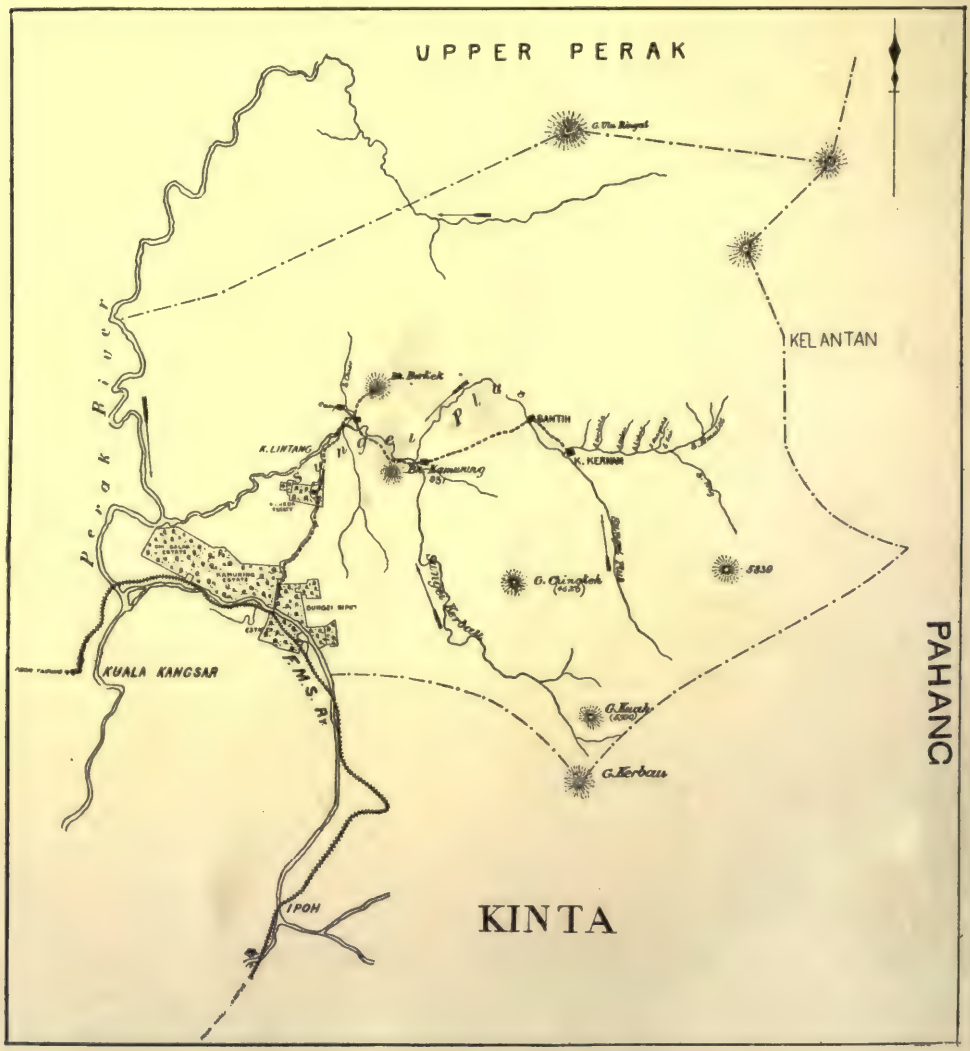


FIG. I.—MAP OF ULU PLUS DISTRICT.

[1] *Ulu*—a Malay word signifying up-stream or source of a river.

These notes and appendices are the results of a small expedition into the region during November, 1905, organised with the fixed purpose of instituting an enquiry into the mixed aboriginal races inhabiting the country. Very little research work has as yet been undertaken amongst these people, though a considerable amount of conjecture has been indulged in respecting them. It was with the object of confirming or refuting these conjectures (whichever the case might be) that I set out to explore parts unknown and to work amongst tribes until then unfamiliar with the aggressive methods of the anthropologist. Personally the expedition was disappointing, the usual difficulties of transport, sickness, rains, etc., being so pronounced that I was forced to return at the end of four weeks without reaching the point I had hoped. It is a crumb of consolation to know, however, that anthropologists acquainted with the wild tribes of the Malay Peninsula consider the information gained sufficient to settle definitely the dispute of origin of the Plus Aborigines. Apart from this favourable verdict it is earnestly to be hoped that the publication of these notes may serve the useful purpose of a guide to future investigations higher up the valley of the Plus.

Until the date of my journey the most remote spot in the Plus Valley reached by any anthropologist was Lasah; and here I made my base or starting point. In this neighbourhood Mr. Leonard Wray worked many years ago; and in his note attached to the first part of Anthropology of Messrs. Annandale's and Robinson's *Fasciculi Malayenses* he refers to the tribes inhabiting the valley of the Plus as a "Mixed Sakai-Semang people." From my observations there can be little doubt left that the valley forms a line where the one race merges into the other, and on examination of the few descriptive details and measurements with which I am able to supplement this paper, it will not be difficult to realise that the people are indeed very mixed. I actually met some Semangs in the valley of the Chior (a small tributary of the Plus near Lasah) at the commencement of the trip; but they had tramped down from Upper Perak with a quantity of rotan for trading purposes. The people up-stream, however, insisted that they did not mix or intermarry with the Semangs; in spite of which assertion many of the portraits produced in the accompanying plates (it must be admitted) show marked resemblances towards the Semang type of aborigines.

On the other hand they confessed to obtaining blow-pipes and darts from the Semangs, admitting their inability to make these weapons themselves. Indeed in many camps this favourite instrument of the chase was not used at all, and those that I was able to collect were all made with an inner tube of the long-jointed bamboo (*bambusa wrayi*),[1] and the method of marking the head of the darts, as practised by the Semangs to denote the strength of the poison, was also adopted. I was unable to discover, however, any evidence of the use of the bow and arrow; and only on one occasion did I come across a spear, and then one that was used in a spring trap for killing wild pigs and not intended for hand use. But two years

[1] A bamboo which grows at a much higher altitude than these people appeared to frequent.

ago some spears procured from tribes on the Kelantan boundary north of the Plus Valley, whom I had hoped to meet were brought in by one of the Government Trigonometrical Surveyors. These had bamboo blades and wooden hafts and can safely be assigned to Semang origin.

At Sungei Pulut, a small tributary of the Kerbau River near its confluence with the Plus, was a large camp of people tending towards Malayan characteristics. They had, in fact, until recent years been detained in bondage by the Malays of the Kuala Kangsar district, principally as *gambalas* or elephant herdsmen. They built houses closely resembling Malay architecture. An old and rather emaciated member of the camp was acknowledged as their chief whom they called the "Ketua," a Malay title for a village headman. Apart from this man the male members of the camp were remarkably well developed.

These people called themselves "Orang Darat," a Malay name largely in use amongst the aboriginal tribes of Perak, and meaning merely "countrymen." They were very secretive with their women; and though I halted in their midst for many days I was only suffered eventually to photograph them, and by no inducement could the men be persuaded to allow any measurements to be taken. Their reticence respecting religion and kindred subjects I was likewise unable to break through. They had, as far as I could gather, very little worthy of note in the way of customs, etc. There was very little tattooing and no painting of the features. There were no personal ornaments of any kind excepting a few seed necklaces worn by some of the men; and though the masculine portion of the camp affected the ordinary hip-cloth of the Sakai, the feminine portion, for the short time I saw them, were all well-clothed in sarongs and Malay dress.

At Santih, a day's march from the Sungei Pulut, I came on to a large abandoned Sakai clearing cultivated with tapioca, gourds, and bananas, but with the dwellings burnt to the ground. On exploring the country the day after arrival we came across the people encamped on the opposite bank of the river about two miles distant. They had, I was told, only recently left their old camping ground owing to a number of deaths, but they would probably be returning there at some future date. They had built their temporary habitations of whole and split bamboo, and the floor of each stood some 8 or 9 feet from the ground—a precaution against tigers and other prowling nocturnal beasts which they said infested the neighbourhood. The incentive for settling on the other side of the river was that the *hantu* (the Malay word for "ghost"), who had stricken down two or three of their kinsmen in a comparatively short space of time, was not able to follow them across the water, and so finding the place deserted would himself abandon the spot. Their dead they had buried in the old clearing, and afterwards pointed out the graves to me; but there was nothing significant about them. They freely confessed their belief in this evil spirit haunting the ground, but at the same time could not give any word of their own for such supernatural being, though they spoke but very little of the Malay language.

Amongst these people I obtained strong evidence of Semang influence. In their deserted camp I picked up from the ruins of one of the houses, quivers, ipoh spatulæ, and other relics of distinctly Semang type. These they told me had been left behind by Semang visitors, and as I was allowed to annex them without a murmur or request for an exchange I assumed that they attached no value to them. Amongst the articles also were two sharp-pointed bone implements made from the humeri of a gibbon ape (*hylobates*) which I took for hair-pins, but which they told me were Semang tattooing needles, a statement I was rather inclined to doubt. They themselves tattooed their faces, but used the long needle-like thorn of the *bertam* palm for the purpose.

They had long given up the use of the blow-pipe, principally because of the difficulty in procuring the bamboo. They lived apparently by bartering, trapping and the primitive form of agriculture already mentioned. The former they conducted with a Chinese trader stationed at Lasah, whither they rafted down-stream on bamboo rafts, taking some nine or ten hours to accomplish the journey. The articles bartered were principally rotan cut from the jungle and fowls bred in the camp, and they received in exchange cloth, rice, tobacco and matches.

Roaming about in the abandoned settlement was a domesticated wild boar (*Sus cristatus*), which they assured me had been brought up from quite a baby by one of the women. Similar instances of rearing the young of wild beasts have been recorded amongst other aboriginal tribes of the country. Also, later on in the expedition, a woman at Kuala Kernam nourished, without hesitation, for over a week a diminutive baby gibbon (*H. lar*) which we had been fortunate enough to capture. This animal eventually survived two English winters in the London Zoological Gardens, developing into a particularly strong and healthy monkey.

At Santih, as at Sungei Pulut, the men were very reluctant in introducing their women, and though I ultimately succeeded in securing photographs and a few measurements I became very unpopular in consequence.

At Kuala Kernam, another six or eight miles up stream, I came upon quite a different state of affairs. Both men and women were perfectly unrestrained, and the latter as well as the former readily submitted to both ordeals of photographing and of measuring. They were, as well, far more primitive folk than those I had heretofore met, many of the women running about in narrow strips of bark cloth (Plate XIV, Fig. 4), with painted and tattooed faces, and wearing porcupine quills through the septum of the nose. The nose-quill was worn for adornment, and the painting of the face, in my opinion, was done for the same reason; but they told me, perhaps not without a touch of modesty, that it was practised only for healing purposes, being an effective cure for headache. (Plate XIV, Fig. 5.) The paint consisted of smoked rubber latex, the liquid being blackened as it exuded from the cut by the smoke from a fire burning at the foot of the tree. It was applied to the face by means of the fingers of another person, the operation reminding one of stage professionals "making up." My idea that it was purely to humour feminine vanity is deduced from the simple fact that the

men on their own stating never resorted to the practice, and it is only natural to infer that they were not immune from headache! Tattooing, on the other hand, was found amongst both sexes; but the patterns were very indistinct, and in many cases it was difficult to detect the markings at all. The women, in addition to these personal adornments, had a fantastic way of dressing their hair, cutting it quite short all over, excepting for a little tassel of hair left growing on the crown, and which is very well seen in the same picture as that illustrating the painted features. Both men and women wore necklaces of wild seeds and monkey's teeth, and some brass wire (a quantity of which I took with me for taxidermic purposes) they very soon twisted into bracelets, anklets and rings. Also some 10 cent. pieces, with which I rewarded a pair for their patience by special request, the woman quickly converted into a necklace.

The people at Kuala Kernam subsisted entirely on the root of the tapioca plant, wild herbs gathered by the women, and animals trapped or killed with the aid of the blow-pipe by the men. Taken on the whole, they were not such a healthy-looking community as is generally found amongst these aborigines, most of them, children and adults alike, being afflicted with a scaly affection of the skin, known to the Malays as *Kurap* (Plate XIII, Fig. 4). It may be worthy of note to mention here that although I handled these persons freely and slept for many nights on the same "bed" (*i.e.*, part of the floor) previously lain on by one of them my own skin exhibited no signs of contracting the disease.

Their habitations were very primitive and squalid, built mainly with split bamboo patched with bark, and a roof of interlaced palm leaves. Two or three families lived in one house, and though there were only two houses amongst a total population of about twenty they willingly gave up one for my sole occupation and all crowded into the other one! To both of these houses was attached a small room set apart for the children, forming a primitive nursery. Fires were kept burning or smouldering on the floor of the houses, a square patch of clay and gravel in the centre of the room forming a rudely constructed fireplace.

As amongst other Sakai races these people kept domesticated dogs and fowls. They did not trade, at least directly, with civilized races, being effectively cut off from down-stream settlements and villages, so far as rafting was concerned, by an unnavigable cataract. They frequently visited up-stream tribes, and even occasionally camped over the Kelantan boundary. They attempted nothing in the way of agriculture, except the wild tapioca previously mentioned. Indeed, their extreme nomadic habits would hardly permit it, for I gathered from remarks that they changed camping ground at least three or four times in the course of a year.

They had no system of chieftainship, nor did they look up to any single person as their head. A man had one wife at a time, which he took from another camp; it was not usual to marry a woman brought up in the same camp. There was no wedding ceremony, and no oaths taken, or form of allegiance sworn by either party. Children seem to run to three or four in a family, and twins had never been heard of.

These people at Kuala Kernam called themselves, as those at Santih did, "Sakai." In this connection I would draw attention to comments on the subject of tribal names by Messrs. Annandale and Robinson in *Fasciculi Malayenses*, where, in "Anthropology," Part I, page 48, they say:—"It seems likely that the Mai Darat" (Orang Darat) "are the same tribe as that described by previous writers as Sennoi or Sinnoi, and that *sennoi* is a word equivalent to *hami*, meaning 'men.'" The aborigines of the Ulu Plus actually gave the word *sennoi* as equivalent to *orang*, the comprehensive Malay word signifying person or people. But they persisted in calling themselves Sakai (with the exception of the people at Sungei Pulut), saying that they never employed *sennoi* as a tribal name, and that they were unacquainted with the title "Mai Darat" or with any people that used it.

From the descriptive data included in the form of appendices in this paper the following summary of details may be given as of general interest. The colour of the skin is usually of a reddish brown with a few instances of an olive shade. The eyes are always dark brown and the hair black. The hair on the head varies considerably in character, being frizzly, curly, wavy, straight, thick or thin, in fact, all stages intermediate between Semang and Sakai. On the face hair is usually scanty, and when present is always wiry. On the body it is absent, but generally plentiful on the legs. The face is invariably wedge-shaped, sometimes lengthened, sometimes broadened, and, in the women, usually rounded. The profile is negroid, prognathism slightly suggested in only two instances, otherwise entirely absent. Lips on an average are of medium thickness, if varying at all inclined to be rather thick than thin. The average height of nine adult males works out at 1,538 mm. (say just over 5 feet), and four females at 1,407 mm. (say 4 feet 7½ inches).

APPENDIX I.

A Short Vocabulary of the Dialect used by the Aboriginal Tribes Inhabiting the Valley of the Sungei Plus in the State of Perak, Federated Malay States. Collected by Fred. W. Knocker.

HUMAN BEINGS.

Child, *kwat.*
Corpse, *lokak.*
Fool, *goh binong.*
Husband, *tau.*
Malay, *goh* [? *gob*].
Man, *babō.*
Person, *sennoi.*
Thief, *sityet* [*cf.* "steal" in Besisi vocabulary].
White man, *goh bior.*
Wife, *kedor.*
Woman, *babu.*

ANATOMY.

Ankle, *katong.*
Arm, *sapal.*
Arm-pit, *sennor.*
Beard, *sentul bahte.*
Blood, *embög.*
Body, *tenah.*
Breasts ♀, *bot.*
Chest, *dahut.*
Chin, *jakah* [? usually *chaka*].
Ear, *nintok.*
Elbow, *kanyong.*
Eye, *mat.*
Finger, index, *ninyor.*
„ little, *kaiyit.*
„ second or third, *jari* (M.).
Foot, *juk.*
Fore-arm, *chereh.*
Forehead, *petung.*
Hair, *sop* [usually *sok*].
Hand, *ti.*
Head, *kwi.*
Hips, *chandit.*
Knee, *kwi karōl.*
Leg, *kenong* [? *kĕmong*].
Moustache (*see* beard), *sentul bahte.*
Mouth, *nyah.*
Nail, *jenrosh* [usually *chenrosh, chinros, chenros*, etc.].
Neck, *g'lok.*
Nose, *mō.*
Shoulder, *på.*
Skin, *sepu.*
Sternal-notch, *lengong.*
Stomach, *kut.*
Thigh, *bĕlo'.*
Thumb, *tabu.*
Wrist, *katong-ti.*

CLOTHING, ETC.

Hip-cloth ♂, *s'lampit.*
„ ♀, *awet.*
Necklace, *gegåg.*
Nose-quill, *chek nog mer* (*see* nose).
Tattoo, *pipit kapong.*

FOOD.

Rice, cooked, *chanah.*
„ uncooked, *charoi.*
„ unhusked, *bah.*
Tapioca, *kayu* [*cf.* Malay *ubi kayu*].

HOUSE, ETC.

Bed, *dek siklok.*
Creel, *saleh.*
Door, *renkah* [? means ladder].
Fire, *åsh.*
Fire-place, *wāl.*
Floor, *ne'ish.*
Grass-bag, *ragab.*
House, *deh.*
Music, *biyir.*
Plantation, *sĕlai.*

Roof, *terâb.*
Scent, *mitnor* [?].
Smoke, *chityeh.*
Window, no word.

WEAPONS, ETC.

Blow-pipe, *b'lau.*
Darts, *segah, basup.*
Poison (*ipoh*), *dâ*, usually *dok.*
Quiver, large, *luk* [? = *lök*].
„ small, *s'pet.*

ZOOLOGY.

(*a*) *Mammals.*

Antler (*see* horn), *balok.*
Bear, *kwip.*
Beast, *magur.*
Boar, wild, *appang.*
Cat, domestic, *kuchik* [M. *kuching*].
Civet-cat (*V. hermaphroditus*), *snisek.*
Chevrotain, *napu, p'landok* (M.).
Deer, barking, *jet.*
„ sambur, *rusa* (M.).
Dog, domestic, *chuor.*
„ wild, *chelok.*
Elephant, *tungel.*
Flying fox, *kahurt* [?].
Flying squirrel, *ampak.*
Gaur (*s'ladang*), no word.
Goat, *kambing* (M.).
Horn, *balok.*
Leopard, *chechor.*
Monkey, leaf (*S. femoralis*), *sennuluh.*
„ (*S. obscurus*), *beseek.*
„ macaque (*M. cynomolgus*), *rau.*
„ „ (*M. nemenstrinus*), *doch.*
Pangolin, *witwöt.*
Porcupine, common, *chekosh.*
Rat, *chateh* [?].
Rhinoceros, *agāb.*
Squirrel, *kidih.*
Tail, *sentah.*
Tapir, *barau.*
Tiger, *mamö.*
Tusk, *gadik* [Malay *gading*].

(*b*) *Birds.*

Argus pheasant, *kwang* (M.).
Bird, *cheh* (generally *chep*).
Duck, *iti* (M.).
Egg, *tup* [usually *tap* or *tab*].
Fowl, domestic, *mannu.*
Hornbill, *turut.*

(*c*) *Reptiles.*

Crocodile, *boya* (M.).
Frog, *tabek, lechen.*
Lizard, *parih.*
Monitor lizard, *gaiyek.*
Snake, *tajuh.*
Toad, *brengor.*

(*d*) *Fish.*

Fish, *kah.*

(*e*) *Invertebrates.*

Beetle, *taluk.*
Butterfly, *towah* [? *tawah*].
Centipede, *k'lep* [usually *keep, kiip*, etc.]
Cicada, *jareh.*
Mosquito, *jambur* [?].
Sand-fly, *k'luk.*

JUNGLE.

Bamboo, *awat.*
Branch, *dudāl.*
Flower, *tahut.*
Fruit, *kebö.*
Jungle, *sĕrok.*
Jungle, to fell (big), *gegu.*
„ „ (small), *keroch.*
Leaf, *s'lah.*
Mud, *paya* [Malay for swamp].
Seed, *erinat* [?].
Stick, *chetchot.*
Stone, *batu* (M.).
Swamp, *udong.*
Thorn, *jalah.*

Track, *nori.*
Tree, *buh-jehuk.*
Wood, *jĕhu'.*

COLOURS.

Black, *rengah.*
Blue, *blahih.*
Green, *ögneh.*
Red, *engān.*
White, *bior.*
Yellow, *chilluk.*

PHYSICAL GEOGRAPHY, ETC.

Cape, *tanjong* (M.).
Cold, *deket.*
Day, *naiyah.*
Daylight, *esis.*
Down-stream, *mareh.*
Hill, *tenjok.*
Hot, *perak.*
Land, *teh.*
Lightning, *kilat* (M.).
Moon, *gĕche'.*
Mountain, *chelmong* [*? jelmol*].
Night, *laiyet.*
Rain, *tetur.*
Rapid, *jerup.*
River, *tiyu.*
„ mouth of, *bor.*
„ source of, *nenchol.*
Sea, *laut* (M.).
Sky, *rahu.*
Star, *pailol.*
Sun, *matis.*
Thunder, *ĕngku.*
Up-stream, *ulu* (M.).
Water, *ong.*

DEMONSTRATIVE PRONOUNS.

That, *nanah.*
This, *nador.*

ADJECTIVES.

Bad, *sasoh.*
Big, *menoh.*
Bitter, *dek.*
Blind, *kebul.*
Brave, *brani* (M.).
Clever, *lölek.*
Crooked, *kenwun.*
Difficult, *susah* (M.).
Dirty, *bichåt.*
Dry, *kereh.*
Easy, *sen'ang* (M.).
False, *tahan.*
Familiar, *biasa* (M.).
Fast, *git.*
Flat, *tet-lugup.*
Foolish, *binong.*
Good, *baik* (M.).
Hungry, *cherok.*
Lazy, *lengāt.*
Little, *nuheng.*
A little, *mies.*
Long, *jerok.*
Old, *tattah.*
Round, *keldel.*
Sharp, *pihen* [*cf.* "thin"].
Short, *petehr* [?].
Slow, *p'lahan* (M.).
Sour, *assam* (M.).
Square, no word.
Strong, *chedek.*
Sweet, *behet.*
Thick, *tĕbāl* (M.)
Thin, *p'heng* [*cf.* "sharp"].
Thirsty, *haus* (M.).
Tired, *gihal.*
True, *sijek.*
Wet, *kehah.*
Wicked, *jahat* (M.).
Wide, *lebah* (M.).
Young, *litoh.*

ADVERBS.

All, *berlaka* [Mal. *bĕlaka*]
Before, *dadah.*
Behind, *k'ruk.*

Far, *jeruk.*
Here, *annoh.*
Left, *maiyel.*
Much, *pegah.*
Near, *taroh.*
Right, *matuh.*
There, *entul.*
Yes, *bětul* (M.).
No, *tot.*

INTERROGATIVES.

How many, *maroh.*
What, *lemun.*
Where, *enlå.*
Why, no word.

VERBS.

Awaken, *wok.*
Bite, *k'rep.*
Born, *berkuat.*
Breathe, *nehen.*
Call, *panggil* (M.).
Catch, *rot.*
Climb, *at'hoit.*
Come, *madoh.*
Cook, *behchek.*
Cry, *tepyah.*
Cut, *tetrut.*
Dance, *kejehr.*
Die, *kubus* [usually *kěbus, cf.* "kill"].
Do, *telel.*
Do not, *jet.*
Drink, *engong.*
Eat, *chechah.*
Extinguish, *tehput.*
Fight, *gadow* (M.).
Give, *enk'ook.*
Go, *chěchōp.*
Have, *moch.*
Have not, *hoi.*
Hold, *peggat* [Mal. *pěgang*].
Kill, *kaibus* [*cf.* "die"].
Kneel, no word.
Know, *lek.*
Laugh, *letluk.*
Light, *nyinyok.*
Listen, *kekyok.*
Live, *gås.*
Look, *ninih.*
Murder, no word.
Place, *weh.*
Play, *minmun.*
Prick, *cheluk.*
Pull, *jeni.*
Push, *balas.*
Raise, *tekwok.*
Release, *tehset.*
Return, *memah.*
Run, *dedoch.*
Shake, *yehyok.*
Sick, (to be) *gekok.*
„ (illness), *bidit.*
Sing, *gabak.*
Sit, *gul.*
Sleep, *siklok.*
Smell, *enun.*
Speak, *tetu.*
Stand, *tot.*
Strike, *peluk.*
Swim, *lehloi.*
Take, *ankit* [*cf.* Mal. *angkit*].
Tell, *bilak* [Mal. *bilang*].
Wait, *båt.*
Walk, *chachup juk.*
Wash, no word.
Work, *kenyuk.*

NUMERALS.

There are none except the first few numbers, which have been taken from the Malay language.

Observe.—There is no word for "ghost," "good, or evil, spirits," etc.

N.B.—Words marked "(M.)" are Malay words or corruptions of Malay words actually in use.

APPENDIX II.—

Number	1	2	3	4	5	6	7
Tribe	Orang Darat.	Orang Darat.	Orang Darat.	Orang Darat.	Orang Sakai.	Orang Sakai.	Orang Sakai.
Name	Alang.	Busuh.	Buda.	Ngah.	Alang.	Busuh.	Bolitoh.
Sex	♂	♂	♂	♂	♂	♂	♀
Locality	Sungei Pulut.	Sungei Pulut.	Sungei Pulut.	Sungei Pulut.	Santih.	Santih.	Santih.
Age	± 25	± 38	± 45	± 10	± 45	± 22	± 35
Condition ...	Stout and good.	Stout—skin of lower limbs scaled.	Medium.	Medium to good.	Medium.	Stout.	Medium.
Skin colour ...	Reddish brown.	Reddish brown—lower limbs blackish.	Reddish brown—blackish in parts.	Reddish brown.	Reddish brown to olive.	Dark reddish brown.	Reddish brown.
Eyes „ ...	Dark brown.	Dark brown.	Dark brown.	Dark brown.	Dark brown.	Dark brown.	Dark brown.
Hair „ ...	Black.	Black.	Black.	Black.	Black.	Black.	Black.
Character of hair	Frizzly.	Shaven on head, tuft in front.	Curly and shaven.	Wavy and plentiful.	Curly and crisp.	Straight and cut short.	Straight and long.
Hair on face ...	None.	Slight moustache and beard.	Scanty on lips and chin.	None.	Scanty on lips and chin.	None.	Absent.
„ body ...	Little on legs.	None—lower limbs little.	Little on lower limbs.	None.	None. On leg plentiful.	None—scarce on leg.	—
Shape of face ...	Wedge-shaped.	More wedge-shaped (*cf.* No. 1.)	Most wedge-shaped (*cf.* Nos. 1 and 2).	Lozenge-shaped.	Rounded wedge-shaped.	Lozenge-shape.	Slightly wedge-shaped.
Profile of nose ...	Negroid.	Negroid.	Negroid.	Negroid.	Negroid.	Negroid.	Negroid.
Prognathism ...	Absent.	Very slight.	Very slight.	Absent.	Absent.	Absent.	Absent.
Lips	Thick.	Thick, more so than No. 1.	Thick. Lower lip very thick.	Not so very thick.	Thick.	Medium.	Medium and thick.
Remarks... ...	Plate XIII, Fig. 3.	Plate XIII. Fig. 3.	This man has slight tattoo lines on each cheek. Plate XIII, Fig. 3.	This boy is the son of No. 3.	Plate XIV, Fig. 2. Man wearing jacket.	Plate XIV, Fig. 2. Man sitting down.	Plate XIV, Fig. 1.



FIG. 1.—SAKAI MEN AND BOYS, KUALA KERNAM.



FIG. 2.—SAKAI MAN, SANTIH.



FIG. 3.—SAKAI MEN, SUNGEI PULUS.



FIG. 4.—SAKAI MAN, WOMAN, AND CHILD, KUALA KERNAM.

THE WILD TRIBES OF THE ULU PLUS.



FIG. 1.—SAKAI WOMEN, SANTIH.



FIG. 2.—SAKAI MEN, SANTIH.



FIG. 3.—SAKAI MAN, KUALA KERNAM.



FIG. 4.—SAKAI MAIDEN, KUALA KERNAM.



FIG. 5.—SAKAI WOMAN, KUALA KERNAM.

DESCRIPTIVE CHARACTERS.

8	9	10	11	12	13	14	15
Orang Sakai.	Orang Sakai.	Sakai.	Sakai.	Sakai.	Sakai.	Sakai.	Sakai.
Long.	Pandak.	Lig.	Long.	Ngah.	Alleh.	Balleh.	Anyong.
♀	♂	♂	♂	♀	♀	♂	♂
Santih.	Santih.	Kuala Kernam.	Kuala Kernam.	Kuala Kernam.	Kuala Kernam.	Kuala Kernam.	Kuala Kernam.
± 25	± 30	± 22	± 40	+ 35	± 19	± 23	± 10
Stout.	Medium.	Medium to thin.	Medium, white skin disease.	Medium, white skin disease.	Stout.	Stout.	Stout.
Reddish brown.	Reddish brown.	Reddish brown.	Reddish brown to olive.	Olive.	Reddish brown.	Reddish brown.	Reddish brown.
Dark brown.	Dark brown.	Dark brown.	Dark brown.	Dark brown.	Dark brown.	Dark brown.	Dark olive brown.
Black.	Black.	Black.	Black.	Black.	Black.	Black.	Black.
Wavy and thick.	Curly and thick.	Curly.	Straight, cut short.	Wavy and long.	Cut short on crown.	Curly and fairly long.	Straight and long.
Absent.	Very scanty on upper lip.	Absent.	Scanty on upper lip and chin.	Absent.	Absent.	Very scanty on upper lip.	Absent.
—	Absent—plentiful on leg.	Absent.	Absent.	Absent.	Absent.	Absent.	Absent.
Round.	Wedge-shaped.	Narrow wedge-shaped.	Rounded wedge-shaped.	Rounded wedge-shaped.	Rounded wedge-shaped.	Broad wedge-shaped.	Broad.
Negroid.	Negroid.	Negroid.	Negroid.	Negroid.	Negroid.	Negroid.	Negroid.
Absent.	Absent.	Absent.	Absent.	Absent.	Absent.	Absent.	Absent.
Medium and thick.	Thick.	Medium and thin.	Medium.	Medium.	Medium.	Medium to thick.	Medium to thick.
This woman was tattooed on face and neck. Plate XIV, Fig. 1.	Plate XIII, Fig. 2. (see also Plate XIV, Fig. 1.	Plate XIV, Fig. 3.	Plate XIII, Fig. 4.	Wife of No. 11 2 children—no signs of skin disease, breasts long and drooping and both same size. Plate XIII, Fig. 4.	Daughter of a very old man, breasts full, firm and perfectly rounded. Plate XIV, Fig. 4.	Man standing on left. Plate XIII, Fig. 1.	Son of an old man (+ 60) and young woman—his second wife. Boy sitting on left of Plate XIII, Fig. 1.

APPENDIX III.—HEAD MEASUREMENTS.

Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Length	174	180	180	162	150	170	—	—	182	180	173	181	172	192	181
Breadth	140	144	142	133	152	140	—	—	153	143	141	133	130	142	141
Vertex to nasion	125	126	150	106	109	98	—	—	108	132	94	140	129	117	107
„ „ mouth	171	198	181	139	181	172	—	—	189	193	177	173	193	174	167
„ „ chin	217	200	220	195	215	220	—	—	219	206	208	208	205	216	201
„ „ tragus	118	114	121	130	133	109	—	—	129	129	137	—	—	115	—
Bizygomatic breadth	120	110	132	100	150	92	—	—	124	101	120	103	94	112	133
Length of nose	40	40	40	30	44	41	—	—	48	47	47	42	43	51	50
Breadth „ „	40	40	40	30	38	41	—	—	40	38	40	32	33	37	56
Nasion to chin (direct)	94	103	96	90	106	100	—	—	109	93	93	—	93	113	90
Length of right ear	52	57	63	49	59	56	—	—	63	58	48	48	52	56	52
Breadth „ „ „	26	23	34	28	33	28	—	—	32	29	26	26	25	28	29
Length of left ear	48	56	63	46	61	53	—	—	59	53	—	—	—	58	52
Breadth „ „ „	25	29	34	25	33	31	—	—	31	30	—	—	—	32	29

APPENDIX IV.—BODY AND LIMB MEASUREMENTS.

Number.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Total height (erect)	1,463	1,570	1,570	1,275	1,599	1,450	1,380	1,430	1,576	1,600	1,460	1,478	1,341	1,561	1,220
„ (sitting)	776	800	768	626	770	750	730	730	841	821	720	763	683	824	643
„ (kneeling) ...	1,118	1,165	1,182	950	1,200	1,080	1,030	1,057	1,184	1,202	1,088	1,108	1,012	1,159	906
„ (umbilical) ...	—	—	—	—	—	—	—	—	—	—	880	—	—	923	714
Height to chin	1,260	1,353	1,339	1,080	1,360	1,242	—	—	1,350	1,377	1,262	1,253	1,143	1,332	1,024
„ sternal notch ...	1,213	1,269	1,280	1,027	1,340	1,180	—	—	1,287	1,292	1,170	—	—	1,241	957
Length of right foot	213	224	241	202	224	212	—	—	242	240	220	211	210	221	193
„ left foot	—	230	240	200	230	220	—	—	242	241	214	—	—	230	192
„ right upper limb ...	655	640	720	500	675	713	—	—	667	713	627	653	566	600	498
„ right fore-arm ...	377	400	425	321	417	399	—	—	401	433	400	390	345	395	305
„ right hand	143	157	164	140	174	164	—	—	172	183	165	154	155	160	129
Breadth at shoulders	322	330	370	245	326	325	—	—	337	331	320	—	—	357	265
„ hips...	253	294	295	214	272	253	—	—	272	271	217	—	—	265	210
Circumference of chest ...	—	—	—	—	745	750	—	—	806	756	770	—	—	778	618

TOTEMISM IN POLYNESIA AND MELANESIA.[1]

By W. H. R. Rivers.

There is at the present time so much difference of opinion as to what is to be regarded as totemism that it will not be out of place to begin this paper with a short consideration of the essential features of the institution. It is especially necessary to be clear on this point from the outset, for the object of this paper is to demonstrate the existence of totemism in parts of the world where its presence has been expressly denied.

A general review of communities which are undoubtedly totemic shows that there are three chief features of the relation between men and the classes of animals, plants or inanimate objects which constitutes the essence of totemism. The first and most important feature is that the class of animals or other objects are definitely connected with a social division, and in the typical form of the institution this social division is exogamous. Often the division takes its name from the totem, or this may be used as its badge or crest, but these points are less constant and essential. The second feature is the presence of a belief in kinship between the members of the social division and the totem, and in the most typical form there is belief in descent from the totem. The third feature is of a religious nature; in true totemism the members of the social division show respect to their totem, and by far the most usual method of showing this respect is the prohibition of the totem as an article of food. When these three features are present, we can be confident that we have to do with totemism. In anthropology as in other sciences, however, phenomena do not always exist in their typical form, and there are many cases to be found where totemism has departed from these typical characters and remains none the less totemism. Thus if a totemic people give up the practice of exogamy and come to regulate marriage entirely by blood-kinship, the totem will no longer be the sign of an exogamous division, but it may remain connected with some other social division, either the tribe as a whole or the people inhabiting a certain district, village or hamlet, or even a family in a sense more or less wide. If it were found that the supposed totem were connected with individuals only, or with groups of people who stood in no definite relation to other social divisions, we should have much more hesitation in accepting the connection as one indicating totemism. Again, if a relatively advanced people come to believe in their descent from heroes or gods, they may drop their belief in

[1] All the new facts recorded in this paper form part of the work of the Percy Sladen Trust Expedition to the Solomon Islands.

descent from, or even in kinship with, the animals or other objects connected with their social division and yet the transitions between their condition and that of neighbouring peoples may leave no reasonable doubt that the remaining features are those of true totemism. Once more, the value of totemic animals or plants as articles of food may lead to the disappearance of the prohibition of the totem as an article of diet, and yet some restriction on the use of such food on certain occasions, or under certain conditions, will probably survive to show the respect for the totem which once took a more complete form.

The examples I give in this paper derive much of their interest from the fact that they illustrate some of these changes which have obscured but not concealed the true nature of the institution.

I propose to divide my facts into two groups dependent on geographical rather than ethnographical considerations: one group derived from Polynesia and Fiji; the other from the Melanesian islands from the New Hebrides to the Solomons. I will begin with the former.

Polynesia and Fiji.

The presence or absence of totemism in Polynesia has only been discussed, so far as I am aware, in connection with Samoa. The facts on which the belief in its existence has been based have been derived from the account given by Turner.[1] About the facts there is no dispute, and the difficulty has been in the interpreting. In his work on Totemism, Dr. Frazer[2] claimed that the connection between man and animals described by Turner was definite totemism, a position for which he was taken to task by Professor Tylor,[3] who followed Turner himself in regarding the animals as deities which might quite well be wholly independent of totemism. In Fiji there has been a similar course of events. Williams[4] described a number of cases of a special relation between men and animals which were claimed by McLennan[5] as totemism, and he was followed in this by Frazer.[6] The former regarded the gods of Fiji as developed totems. Here again Tylor[7] raised objections and stated that, in the absence of any evidence of totems or totem-clans in Fiji, McLennan's opinions were only to be regarded as conjectures. Dr. Haddon has pointed out to me that Mr. Fison[8] regarded the food-taboos of Fiji as relics of totemism, and further it is evident from Mr. Basil Thomson's recent book[9] that he has regarded the existence of totemism in Fiji as more or less obvious and as not in need of definite proof. Quite recently Father de Marzan[10] has recorded the

[1] *Samoa a hundred years ago*, London, 1884, pp. 25, 28, 35, etc.
[2] *Totemism*, Edinburgh, 1887, pp. 23, 25, 88.
[3] *Jour. Anth. Inst.*, 1899, N.S., vol. i, p. 142.
[4] *Fiji and the Fijians*, London, 1858, vol. i, p. 220.
[5] *Studies in Ancient History*, Second Series, London, 1896, p. 213.
[6] *Loc. cit.*, p. 94.
[7] *Loc. cit.*, p. 141.
[8] *Annual Report on British New Guinea*, 1897–8, Brisbane.
[9] *The Fijians*, p. 115.
[10] *Anthropos*, 1907, Bd. ii, p. 400.

existence of what he believes to be totemism in Fiji, and has given a most valuable account of some of its features. While in Fiji last year, I learnt a number of facts which seemed to me to indicate the presence of totemism most decisively, and a communication sent home by me from Fiji was published in *Man*.[1] As these facts have already been published, I will only here recapitulate the chief points. The people inhabiting the mountainous districts in the interior of Viti Levu form a number of small independent communities, each of which has a sacred animal which none of the community eat. Further, the smaller divisions of the community (*matanggali* or *tokatoka*) have also in many cases sacred animals or plants peculiar to themselves which none of the division may eat, though free to the rest of the community. The institution of exogamy does not exist, so far as is known, in Fiji, marriage being regulated by kinship, and the social organisation of the people has departed so widely from one founded on exogamy that it is impossible to tell which of their social divisions corresponds to the exogamous clan or sept. We have here a case in which one characteristic of typical totemism is not present, but we still have the apparent totem associated with at least two kinds of social unit. The third character of totemism, the belief in descent from the totem-animal, comes out among these inland people in a more decided manner than in any other case of which I have had experience. Here, in collecting a genealogy, an informant went back from human to human ancestor till as a perfectly natural transition he would state that the father of the last mentioned was an eel or other animal. In the special case of eel-ancestry the transition from animal to man was given as having taken place eight generations ago, and Mr. Joske told me that in several cases he had found the animal-ancestor nine generations back. In these cases the sacred animal is believed to be the ancestor of the whole people, but there is also a belief in descent from the sacred animals of the smaller divisions of the community.

I do not think there can be any doubt that in the case of these mountain tribes we have to do with true totemism. It is in fact typical totemism except in the absence of association with exogamy, but there remains a clear connection with other social divisions just as might be expected in a community in which exogamy has been replaced by a different method of regulating marriage.

I assume that the Fijians, as Melanesians, have at some time possessed the usual Melanesian institution of exogamy and that it has disappeared. If anyone doubts this, definite evidence can be adduced in favour of the assumption. These inland tribes therefore furnish a clear case of totemism which has lost one of its characteristic features owing to a change in their social organisation.

In the case of the coastal people of Viti Levu the case is very different. Here my own evidence and that furnished by Williams and other writers shows the existence of deities with certain animal attributes and especially with the power of changing into animals. These deities are connected with the people of certain districts or villages, who are not allowed to eat the animal connected with their

[1] *Man*, 1908, vol. viii, No. 75, p. 133.

god. Evidence of belief in descent from the forbidden animal is absent.[1] If this evidence stood alone, as it did when McLennan and Tylor wrote, it could not be said to be more than strongly suggestive of the existence, or rather of the previous existence, of totemism, but when we take the facts in conjunction with those obtained from the inland tribes, the case for totemism assumes a different complexion, and the mere suggestion of totemism is changed to a very strong probability that we have to do with the remains of the genuine institution. To make the case certain, we want a more complete chain of conditions intermediate between those of the mountain tribes and the people of the Mbau and Rewa districts, and more detailed investigation would almost certainly provide these intermediate links.

If this position be accepted we seem to have a case of the development of totem-animals into gods, but I propose to leave this point till after I have dealt with Polynesia. Before I leave Fiji, I should like to refer briefly to the evidence of de Marzan. He states that each tribe has two principal totems, in each case a tree and an animal, and secondary totems in the form of vegetables or fruits, such as yams, taro and bananas. The principal totems may not be eaten or destroyed, while the secondary totems are eaten. I only heard of plant-totems occasionally, but this was probably due to the very imperfect nature of my inquiries owing to the short time that I was in the country. It is just possible, however, that the three tribes whose members I saw do not resemble in every respect those from whom de Marzan obtained his information. As in the case of the totems discovered by me, most belong to social groups which de Marzan calls tribes, while occasionally smaller divisions have totems peculiar to themselves. Nothing is said about any belief in descent, but some very interesting native traditions are given which suggest a belief in a kind of connection between man and totem different from that of descent. As to the existence of totemism, I think that the account of de Marzan and myself leaves no doubt, but much further evidence is needed on the exact nature of the totemistic beliefs and practices, especially in relation to the history of totemism described by de Marzan and to the possibility I have already indicated that there may be different species of totemism in different parts of Fiji.

During a very brief visit to Apia in Samoa I made inquiries from two independent informants as to the existence of totemism. The facts given agreed in general tenor with those recorded by Turner and I give a brief *résumé* as they bring out one or two points not mentioned by that author. One of my informants told me that each district had its *atua ;* that the *atua* of his district on the outskirts of Apia was the *fe'e* or octopus; that this animal was the *atua* of about 400 people; and that there was a house for the octopus at a place called Falipouma. The *atua* of the next district was the *lulu* or owl, belonging to about 500 people and living at Sagata. In another district the *atua* was a big kind of shell. In

[1] So far as my own evidence is concerned, this point was not inquired into, and I think it is possible that the belief exists.

each case in the old time the people did not eat the animal which was their *atua*, but my informant was quite decided on the point that there was no belief in descent from the *atua*. In the old war times the *atua*, whether octopus, owl or shell, used to call out so that all the people could hear, and the people would then be glad and know that there was going to be a fight. The owl used to fly in front of his people as they went to battle. Another informant spoke of each family having an *atua*, but I was not able to find out what he meant by a family. His own *atua* was a large stone called *Kalinga i*, and he gave the shark and garfish as other examples, while in some cases the *atua* was a tree. In the old time it was believed that those who had the shark for an *atua* were in no danger of being troubled by a shark when they went into the sea. It is evident that in Samoa there is a close connection of certain animals with certain social groups, especially, according to one of my informants, with the people of certain districts, and the members of each group were not allowed to eat their *atua*, but it seemed clear that there was no belief in descent from the sacred animal. Of the three cardinal signs of totemism we have thus only two, and one of those not in the typical form. In Samoa, as in Polynesia generally, exogamy does not exist and marriage is regulated exclusively by kinship, and we might therefore expect that if totemism exists, the totems would be connected with some other social grouping. Taking the Samoan condition standing alone one would scarcely be justified in diagnosing totemism, but when taken in conjunction with Fiji, the doubts must largely disappear. The condition is almost exactly the same as that of the coast people of Fiji, and if the latter is totemism it will be hard to deny that the Samoan condition is the same. An interesting feature of the Samoan condition is the indication of the totem acting as an omen-animal and it is noteworthy that de Marzan[1] has recorded definite divination and omen-telling through the totem in Fiji.

In Tonga I was told that each family had its *otua*,[2] some of which were animals and some stones, while a man might also be an *otua*. Examples of animal *otua* were the octopus, the flying fox, and the pigeon. My informant did not know of anyone who had a plant as *otua*. An animal was never eaten by those whose *otua* it was, and I was told that there was definite belief in descent from the animal. This scanty Tongan evidence distinctly strengthens the belief that we have to do with true totemism, for while there is a close resemblance with the beliefs and practice of Samoa there is in addition the belief in descent from the totem-animal.

The clearest evidence for the existence of totemism in Polynesia[3] is derived from Tikopia. This is a tiny island about 120 miles south-east of the Santa Cruz group. It is inhabited by people who appear to be physically almost pure Polynesians. They certainly have a Polynesian language and their general institutions (to be recorded elsewhere) resemble in their main features those of Polynesia rather than those of

[1] *Anthropos*, 1907, Bd. ii, S. 401.

[2] Mariner referred to such *otua* (vol. ii, pp. 106 and 111 in the first edition), but evidently thought them of little importance compared with the greater deities.

[3] There can also be little doubt that the condition described by Mr. Stanley Gardiner in otuma (*Journ. Anth. Inst.*, 1898, vol. 27, pp. 429 and 467) indicates true totemism.

Melanesia. These people call a number of animals *atua*, a word which they also use for an ancestor. Some of these animal *atua* belong to the whole community and may be eaten by no one on the island; others belong to one or other of the four sections into which the people are divided, the Kavika, the Taumako, the Tafua, and the Fangalele.

The Kavika have the *feke* or octopus, which they may not eat, but it is also forbidden as food to the whole people. The Taumako may not eat the *toke* or sea-eel, nor may they eat a bird called *rupe*, and these prohibitions are limited to this division. The Tafua may not eat the *tuna* or fresh-water eel, nor may they eat the flying fox (*peka*) or the turtle (*fonu*), these two latter animals being also prohibited as food to the whole community, though regarded as especially sacred to the Tafua. The Fangalele may not eat a small black bird called *moko*, nor may they eat a fish called *one*. The *fai* or stingray may not be eaten by anyone, and it did not seem to be sacred to any special division. A man of a division who may not eat a certain animal may also not kill it. If one of the Fangalele caught an *one* fish he usually threw it back, but he might give it to a man of another division. On the other hand, I was told that if a man of one division killed the animal sacred to another division he would fall sick, and would then send for a man of the division to which the animal belonged, and the latter would call on his *atua* to make him well. If the fresh-water eel sacred to the Tafua were killed, the spring supplying the pool where it lives would dry up. If anyone killed a flying fox it was believed that the coconut trees would cease to bear. The case of the turtle appeared to be exceptional in that, while especially sacred to the Tafua, it was prohibited to all the chiefs, but might be eaten by the common people of the other three divisions. It turned out, however, that the removal of the prohibition so far as the common people is concerned was quite recent and that the abstention of the chiefs was due to their greater conservatism.

It was quite clear that there was a belief in descent from the animal *atua*. This presents difficulties when a division has more than one *atua*, but according to my informant in some cases a division had more than one animal ancestor. He said that the Kavika were descended from the octopus, and the Taumako from the eel, the story being that in the old times a man of each division died and became an octopus in the one case and an eel in the other. The Tafua believe chiefly in their descent from the flying fox, but they also believe that a second man of this division became after death a fresh-water eel. Similarly, two men of the Fangalele became animals, one the *one* fish and the other the *moko* bird. Thus the belief is not so much in descent from an animal as in descent from a man who became an animal.

In addition to these animals there are also plant *atua*. One of these is a plant with large leaves like the taro, called *kape*, which is sacred to the Kavika and may not be eaten by the people of that division while free to the rest of the community. This plant seems to belong to the same category as the animal *atua*, and it will be noticed that it belongs to a division which but for this would have

only one sacred object. Three of the divisions have also vegetable *atua* which seem to belong to a different category. These are the yam, the taro, and the coconut, belonging respectively to the Kavika, the Taumako, and the Tafua. These plants might, however, be eaten by all, but the Kavika do not like to see anyone cut the taro with a knife, and they scrape off the skin with the shell of a mussel. In this case it was said that it was the top of the yam which was especially regarded as the *atua*. Similarly, the Taumako do not like to see the taro cut with a knife, and here again it was a special part, the eye of the taro, which was regarded as the *atua*. The Tafua also objected to a knife being used to open a coconut, and always used a stone. This restriction on the use of a knife is of course recent, and is an interesting example of the feeling that sacred objects should not be subjected to usages which have come from without into the ordinary life of a people.

The special relation between each division of the people and their sacred plant is shown in the planting season, the first yams being planted by the chief of the Kavika, while the chief of the Taumako plants the first taro. The chiefs of the respective divisions are also the first to eat their sacred vegetables. In the case of the coconut the special privilege of the Tafua is that its chief has the power of imposing a *tapu*.[1] The Fangalele have no plant *atua*, but their chief assists the chief of the Kavika in planting the first yams.

There can be very little doubt that in the case of the animal *atua* we have true totems. The condition is not one of typical totemism, for the institution is not associated with exogamy. The four divisions intermarry with one another, and marriage also takes place between members of the same division. I was told that marriage was regulated entirely by kinship, and that so long as there was no consanguinity it was a matter of indifference whether the wife of a man was of his own or of a different division. The situation thus resembles that of Fiji, Samoa, and Tonga in the absence of an association between totemism and exogamy, which is perfectly intelligible in face of the fact that in all four places the regulation of marriage has come to be based on kinship. The situation as regards the vegetable *atua* is different. The *kape* of the Kavika falls into line with the animal *atua*, and is probably a true totem, but it is possible that the connection between three of the divisions and the yam, taro and coconut is quite distinct from totemism and has had its origin in some other category of belief concerning the connection of man and other living things. There is in the case of these three plants no belief in descent, and as the objects are eaten, only one of the three cardinal signs of totemism is present, and that not in its typical form.

There is a very close resemblance between the vegetable *atua* of the Tikopians and the secondary totems of de Marzan in Fiji. In both cases the vegetables could be eaten, but certain precautions were taken in their use. Just as the Tikopian will not use a knife to cut his yam or open his sacred coconut, so the Fijian will not take off the rind of his sacred yam, nor cut the tuber, but puts it whole into the oven. In each case we have a vegetable which is sacred to a division of the

[1] These customs will be described fully elsewhere.

people and is yet eaten. In both cases there are other objects which may be regarded as true totems, and I am inclined to regard the customs connected with these common articles of diet in both peoples as something only accessory to totemism which may have had an origin quite independent of totemism proper.

Before I leave the subject of Polynesian and Fijian totemism I should like to deal with the question of the development of gods from totem-animals. If we accept the view that the relations between men and animals in Samoa and Fiji indicate true totemism, it would seem to follow naturally that the gods of these peoples have had their origin in totems. I have myself assumed that this has been so in my article on Fijian totemism, but further consideration has led me to revise this opinion. McLennan saw in the Fijian Ndengei a god developed from a totem—in this case a snake—but it is clear that Fijian tradition represents Ndengei as a man who came to Fiji from another place, and it is far more probable that the deity is an apotheosised man; that he was a man who made a great impression on the people of his time and has since become a god just as heroes have developed into gods elsewhere. His connection with the snake may have been due to this animal having been his totem, or the connection may have arisen in some other way.[1] If this has been the course of development in the case of Ndengei, the same may have happened in other cases.[2] It is probable that in Fiji the gods or god-like beings have been developed, at any rate in many cases, from heroes and that the animal nature of the gods is merely an indication of the close relation universally believed by totemistic peoples to exist between a man and his totem. The evolution would not be simply from totem to god, but from hero and totem together to god. It is true that in the case of the mountain people I was told that the totem-bird of the Nandrau had given certain rules of conduct to the people[3] and seems thus to have behaved like a god, and I do not wish to deny that the more direct evolution may have taken place, though I suspect that the indirect method has been the more usual.

Totemism in Melanesia.

At the present moment it cannot be said that the presence of totemism in Melanesia (excluding Fiji) has been definitely demonstrated. In the Solomon Islands, Codrington described the connection of animals with exogamous social divisions, but did not regard this connection as an indication of totemism. In the Banks' Islands and the New Hebrides the same author has described a few cases of connection between men and animals which again may possibly indicate totemism, but only as the most fragmentary relics. Totemism, however, begins to appear definitely in the north and Ribbe[4] has recorded totemism in the Shortland Islands, and it is probably definitely present in the Bismarck Archipelago.

[1] According to Basil Thomson (*The Fijians*, p. 17) the serpent nature of Ndengei is merely a modern gloss.

[2] A Samoan example seems to be that of the octopus brought to Samoa from Fiji by a chief (see Turner, p. 28).

[3] *Loc. cit.*

[4] *Zwei Jahre unter den Kannibalen der Salomo-Inseln*, 1903, p. 140.

On my way to the Solomon Islands last year I passed through Melanesia from the New Hebrides onwards and paid especial attention to the relations between men and animals or plants. The locality in which I found the clearest evidence for the existence of totemism was in the middle of the chain of islands, in the Santa Cruz group consisting of the island of this name, the Reef Islands, Utupua and Vanikolo, and I will therefore begin my account with these.

The Reef Islands.

I visited the group of islands known as the Matema or Swallow group and obtained information both there and from some natives of the islands who were on the missionary steamer, the *Southern Cross*.[1] The people of the islands present a mixture of Melanesian and Polynesian elements. In physical appearance they vary much, some having a more Melanesian and others a more Polynesian character, but so far as I could see, they inclined much more to the former. In language they show a similar mixture; in those islands I visited it was Polynesian, but I was told that there are islands or districts where the language is definitely Melanesian.

In these islands there are a number of social divisions which are definitely exogamous, each having one or more animals which they may not eat, while, as in Tikopia, there are also animals prohibited as food to the whole community. The exogamous divisions, called *mata*, have names, and I was told of eight altogether, though some of these are unrepresented on any one island. In the island of Nukap or Nukapu there are four divisions, the Pelembo, the Pependal, the Penvel and the Pelengam, while on the island of Peleni there are five, two of which, the Pelembo and the Pependal, had the same names as those of Nukap, while the others are the Pelewe, the Pekuli and the Pepali.

I could not obtain a fully satisfactory account of the animals prohibited to each division, chiefly because my informants were few in number and each could only speak positively about his own division. The Pelembo may not eat the eel and on Nukap this prohibition extended to both the sea and fresh-water kinds. On Peleni, on the other hand, none of the Pelembo eat the sea eel, while the fresh-water eel or *tuna* is eaten by some of the division and not by others, there being a difference of opinion at the present time as to whether it is the same animal as the sea eel or another. The difference of opinion is probably only one indication of breaking down of the taboo. Another indication of such breaking down is that, while the turtle is not eaten by the Pelembo of Nukap, it is eaten by those of Peleni, although it was said that if there was sickness on the island it would not be eaten by any of the people. The Pelewe of Peleni may not eat the flying fox (*peke*) nor the stingray (*fai*), nor may they eat a fish called *awau*, which my informant identified with a picture in a natural history book of a Scorpœna.

[1] I should like here to express my very great indebtedness to the members of the mission and especially to the Rev. W. J. Durrad and to the Rev. C. E. Fox for their help in collecting most of the facts recorded in this article.

The forbidden animals of the other divisions were all fishes which I was not able to identify, except that one was the *onu*, which was evidently the same as the *one* of Tikopia, for both were identified with the fish which is called *one* in Mota. It will be noticed also that the eel, flying fox, turtle and stingray are all also sacred animals in Tikopia, and that they have the same names in the two places. In Nukap certain fishes were prohibited to the whole community.

I was told definitely that in all cases there was belief in descent from the forbidden animals, though this belief is evidently of a vague kind. The Reef islanders have a common house for men corresponding to the *mandwai* of Santa Cruz and the *gamal* of the Banks' islands, and it appeared that each division or *mata* should have its own house or *afalau*. At the present time people live indifferently in these houses and do not confine themselves to one of their own division, but if there should be a fight the people owning an *afalau* would drive out members of hostile divisions. It is probable that at one time each division had its own *afalau*, and that the present condition is due to the fact that some of the divisions have decreased so greatly in number that they have not kept up a house of their own, but have joined in with others, and that this has led to a general breaking down of the old limitation which kept people to their own *afalau*.

The case of these islands differs from those so far considered in that we have now to do with typical totemism. The animals forbidden as food belong to exogamous divisions of the community, though these divisions have names otherwise derived, while there is also a belief in descent from these animals. The fact that each division has more than one totem may be due to the fusion of divisions, the tendency to which can be seen at work at the present time, while it is also possible that we may have in these islands a fusion of two peoples, one Melanesian and the other Polynesian, each of which was in possession of totems at the time of their fusion.

Santa Cruz.

My only information here was obtained from two young natives who could only speak definitely about the regulations of their own divisions or *nau*, but it was sufficient to leave no doubt in my mind that genuine totemism existed on this island. Both came from the small island of Temotu at the north-west corner of the larger island of Ndeni, but they were confident that the condition they described was general in Santa Cruz, and I learnt from Melanesians who had been on Norfolk Island that the natives of Santa Cruz had always been remarkable at the Mission School on account of the number of things they may not eat.

I have since found that the existence of totemism in Santa Cruz has already been pointed out by Wilhelm Joest, whose notes on the subject have been recorded by Baessler.[1] Joest states that there are ten *nau* which never marry with one another and take their names from certain animals or plants, each of which may not be eaten by the members of the division to which it belongs. These objects are

[1] *Neue Südsee-Bilder*, 1900, S. 386.

the following:—The *mbua* or shark, the *natu* or dolphin, the *betila* or whale, the *kuli* or dog, the *mbo* or pigeon, the *kio* or fowl, three fishes called *niöda*, *mbu* and *mbilla*, the *talao* or pawpaw and two other plants, the *niaka* and *kanalapiti*. Joest states that anyone who eats the prohibited fishes or the pigeon will fall to pieces, his teeth dropping out, while one who has a plant as a totem is not only prohibited from eating it, but may also not dig it. Those who have the dog as totem may not give any of their food to a dog. Further he states that a man would not utter a word if the name of his totem formed part of it.

My informants could only give the names of four divisions, and it is possible that only some of the full number are represented on the island of Temotu. The four *nau* took their names from the *mbu*, a fish, the *mbua* or shark, the *mbembla*, a red fish which resembles the trumpeter-fish and the pawpaw which they called *tambao* instead of *talao* as given by Joest. They said that each division had in addition a number of other objects which they might not eat. Thus the *mbu* people in addition to the fish of this name might not eat the octopus (*mo*), a sea-snake called *vo*, a red yam called *ningiamb* and the fowl (*kio*). Again, the *mbembla* division might also not eat the turtle (*vu*), the *londoi*, a sea crayfish, the octopus and a big banana called *papindo*. According to them the *mbua* people might eat the white part of the shark near the tail, only the flesh lying under the black part of the skin being prohibited. They said that a man might not marry a woman of his own *nau*, and that the people of each division believed in their descent from the animal from which they took their name.

The *mbembla* people were said to have red eyes, but this was the only example that could be given of mental or physical resemblance with the totem.

We have in this island all the cardinal signs of totemism; exogamy, belief in descent and prohibition of the use of the eponymous object as food. The *mbembla* of my informants is not given by Joest, but it may be another name for one of the fishes he records. Otherwise the two accounts agree, though one is more complete in some respects and the other in others. Though both are evidently but fragments of what is yet to be obtained, their agreement can leave no doubt that we have to do in this island with genuine and typical totemism.

Vanikolo.

On this island Mr. Durrad and I were able to make a more satisfactory inquiry into the subject of totemism and found there, not only the existence of the institution, but its presence in a very interesting form. There are on this island ten exogamous divisions, each taking his name from a totem object. These ten divisions are named after the *mere*, a fish; the *vesenamaka* or hermit crab; the *vere* or stingray; the *nomerue*, a fish; the *ive*, the sea-lion; the *wanue*, a mullet; *wire*, water; *nepie*, fire; *tegmete*, or bowl; and *ambumi*, grass.

In all the cases in which a division takes the name of a fish, this fish may not be eaten, while there are restrictions of a different kind for the people of other divisions except the fire people, in whose case I could not discover that there was

any taboo. The *wire* or water people may not drink the water of a certain bubbling pool; the members of the *tegmete* division may not eat food prepared in a bowl and the *ambumi* people may not walk on grass.

In all cases the people are believed to owe their descent to the object from which they take their name. The *nepie* division is descended from a fire which the people say can still be seen; the *tegmete* people are descended from a child which floated to Vanikolo from some other place in a bowl; the *ambumi* people believe that grass gave birth to a female child. The *wire* people are descended from water and the remainder from their respective fishes. Here the three cardinal signs are present in every case except that there is no restriction in the case of the fire people. The *tegmete* example is particularly interesting. There can be little doubt that this division is descended from some woman who came from another island and some real or supposed incident in connection with her arrival was seized on as the badge of her descendants, while a somewhat fanciful restriction came to be imposed on them in order to bring them into line with other divisions. It illustrates well a possible method by which such objects as the heavenly bodies, fire, water or the rainbow may come exceptionally to be totems; they may be chosen as badges for a new member of the community whose totem is unknown, some object being fixed on to take its place. In the neighbouring island of Utupua the conditions are probably the same as in Vanikolo.

It is quite clear that in this district in the heart of Melanesia we have genuine totemism, but the case is very different when we turn to the islands south of Santa Cruz or to the Solomons which lie north-west of it.

The Solomon Islands.

These islands are far from having a uniform culture and in some regions there is no totemism or only its faint relics, while in others it is present. According to Ribbe[1] it is present in the Shortland and Treasury Islands at the north-west end of the group, but as these islands are now being thoroughly studied by Mr. G. O. Wheeler I will not include them in my survey of the group. Ribbe states that the totemism of the Shortlands extends to the northern end of Choiseul, but otherwise we know nothing of this island. In the rest of the Solomon Islands there may be said to be three distinct cultures. In one group consisting of New Georgia, Ruviana, Simbo or Narovo, Ganongga (Ronongo) and Vella Lavella there is no exogamy, marriage being regulated by kinship, while descent is through the male. Here there is nothing which by any stretch of the term could be regarded as totemism. In the most eastern group again, consisting of San Cristoval, Ugi, Ulaua, and Malaita (Mala), there is also male descent with marriage in general regulated by kinship, though there may also be some village exogamy, and here again there is little or no evidence of the existence of totemism.[2]

[1] *Loc. cit.*

[2] In Malaita offerings are made to images of sharks, sword-fish or bonito, and these animals are said to be ancestors (Codrington, *The Melanesians*, p. 174). We know, however, very little

It is in the intermediate group consisting of the islands of Florida (Nggela), Ysabel (Bugotu), Guadalcanar (possibly only the northern half), Savo and probably part of the Russell Islands that we find definite exogamy, the people of each island being divided into several sections, the members of each of which are not allowed to intermarry.[1]

The number of divisions varies in different islands. In Florida, where the divisions are called *kema*, there are probably now only four, the Honggokama or Manukama, Honggokiki, Nggaombata, and Kakau, two others given by Codrington, the Himbo and Lahi, having either died out or been absorbed into other divisions. Over the greater part of Ysabel there are only three, the Dhonggokama, the Vihuvunagi and the Posomogo. In Guadalcanar I was told of six *kema*, the Lakwili, Kindapalei, Haumbata, Kakau, Kiki and Simbo. The latter divisions are, however, regarded in a different light from the rest, both being said to be branches of the Lakwili. On Savo there are five divisions called *ravu*, the Gaumbata, Dhonggo, Lakwili, Kikiga and Kakauga.[2]

Each of these divisions has one or more sacred objects, and when these are animals they may not in general be eaten, while there is in some cases belief in descent from an animal which may not be eaten. These sacred objects must be considered separately for each island.

In Florida the sacred objects are called *tindalo*. I could not make any inquiries myself in this island, and must content myself with giving Codrington's account. The Honggokama may not eat the pigeon, but they may eat the bird called Manukama, from which they take their second name. The Kakau, on the other hand, may not eat the *kakau* crab, from which they take their name, while they are also forbidden the parrot, *Trichoglossus Massena*. The Nggaombata may not eat the giant clam, nor the Lahi the white pig.

In Ysabel the sacred objects are called *tindadho*. The Vihuvunagi have as their *tindadho* the *manuhutu* or eagle which they may not eat, the Dhonggokama have the *mbelama* or frigate bird and the Posomogo the *hiyara*, a parakeet. In each case the *tindadho* may not be eaten. I was told by a man who belonged to the Vihuvunagi that this division also had as *tindadho* the shark (*ele*), crocodile (*vua*), snake (*poli*), eel (*oloi*), and thunder (*rete*), and that the four animals might not be eaten. He could not tell me what were the associated *tindadho* of the other divisions, and it is possible that some of the above are common to the whole community.

In Guadalcanar a much ampler account was obtained than elsewhere, each division or *kema* being found to have a large number of *tinda'o*, the *l* of *tindalo* having dropped in this island.

The Lakwili have as *tinda'o* certain men who were said to have been the first

about this island and San Cristoval, and it is quite possible that some form of totemism may be found here. The southern end of Guadalcanar is even less known.

[1] The existence of these divisions was first recorded by Woodford, *A Naturalist among the Head-hunters*, London, 1890, p. 40.

[2] The *g* in these words is the Melanesian *g*, which in this island might well be transliterated as *ghr*.

men of the clan, certain images and two animals, the *mauvo* or eel and the *kohe*, a small fish, neither of these fish being eaten by the members of the division. The Kindapalei have as *tinda'o* their first man, together with a snake called *choholisi*, the moon and sun spoken of together in one word as *vulamanaso*, and a sacred fire called *lake tambu*. The Haumbata have also their first men, a shark called *baheanapombo* and the *naroha*, a pigeon, neither shark nor pigeon being eaten. About the other divisions the information was less definite, but it seemed that neither the Kakau nor Kiki could eat the shark, while the Simbo were forbidden the monitor lizard.

In Guadalcanar the *tinda'o* are much reverenced, and my informant, a Christian, said that they were worshipped. If a Haumbata man wishes to kill an enemy on the land he goes to a special place belonging to the *naroha* bird and calls on the bird for *mana* (power) and *susuliha* (strength). He offers food in the form of a pudding as well as fish, pork and tobacco, and it is Naroha who gives him the *mana* which enables him to kill his enemy. If, on the other hand, the Haumbata man wishes to kill his enemy on the sea, he makes offerings to Baheanapombo, and this shark will break the canoe and eat the enemy.

The sacred snake (*chopolisi*) of Kindapalei is a very big creature which lives on a rock by a place called Koli. The place is forbidden to all except the Kindapalei, and the people of that division only go there to worship him. If others wish to pass the place, they must go in a canoe or walk by far out on the reef. The Kindapalei people take puddings and other offerings to the snake and obtain *mana* from it just as the Haumbata get *mana* from their bird Naroha. The Kindapalei also obtain *mana* from the sun and moon, and from the sacred fire called *lake tambu*. The latter is a fire which springs out of the rock at a certain place, and when the people take offerings these are burnt in the fire. If the people kill a man they take the tongue and lips as an offering to *lake tambu*. There is a special spot sacred to the moon and sun, *vulamanaso*, where similar offerings are made.

If the animal *tinda'o* are eaten, the result is illness; thus a man who eats the *naroha* bird gets sick, and blood comes from his mouth and nose. To make him well, offerings are made to Naroha and the man may recover. If the *baheanapombo* is eaten sores break out on the body of the offender.

The Savo name for the sacred objects is *manjali*. The Gaumbata have, in addition to an image and a spirit woman, the *vava* or monitor lizard, which they do not eat. The Dhonggo have a spirit man together with the *tambu kosu* (sacred bird), which is the same as the *manuhutu* of Ysabel. The Lakwili do not eat a small monitor lizard called *sangavulu*, while the Kikiga have three prohibited animals, the shark, a large flat fish called *limanibarava*, and the *kurau*, a pigeon.

The sacred aspect of the animal *tinda'o* does not seem to be present in Savo,

[1] In connection with the association of men, animals and the heavenly bodies as the possession of exogamous divisions of the community, it is important that in the sacred houses of Florida Codrington (*Melanesians*, p. 94) records the presence of images of birds and fish, crocodiles and sharks, the sun and moon and men. This makes it highly probable that there existed in this island an association of *tindalo* resembling that of the Kindapalei of Guadalcanar.

where there is nothing which my informant called worshipping, but the animal is merely *tambu* and is not eaten.

In all cases the divisions are exogamous, and there is a definite correspondence between the divisions of different islands, thus the Kindapalei of Guadalcanar correspond to the Dhonggokama of Ysabel, the Honggokama of Florida, and the Dhonggo of Savo. A Guadalcanar man belonging to the Kindapalei would be not allowed to marry a Dhonggokama woman if he went to live on Ysabel, but would be limited in his choice to the women of the other two divisions of that island. The Dhonggokama of Ysabel appear to correspond to both the Honggokama and Honggokiki of Florida. The Lakwili of Guadalcanar or Savo correspond to the Vihuvunagi of Ysabel and the Kakau to the Posomogo. Codrington explains the different number of *kema* in the different islands by the splitting of a clan into two sections, but it is possible that there may also have been a dying out in some cases, as appears to have happened or be happening with the Himbo and Lahi of Florida. The late Dr. Welchman told me that there was one district of Ysabel where there are only two divisions, and this may have been due to such a disappearance. So far we have seen that there is a definite association of two of the cardinal signs of totemism, exogamy and taboo of the animals as food with very definite respect in Guadalcanar at any rate. The third cardinal sign is less definite. Dr. Codrington states that the Florida people have some sort of belief in descent from the animals which they may not eat, but in one case the ancestor which gave its name to a *kema*, the Manukama, could be eaten, and the native accounts represented the forbidden animals as having been associated with human ancestors rather than as ancestors themselves. I was not able to go into this question of descent, but an Ysabel man gave me the legend of the origin of the Vihuvunagi, which probably represents the kind of tradition by which the natives account for the connection between men and animals. An eagle (*manuhutu*) called Vihuvunagi laid eggs in a nest on a big tree. When the eggs broke there came out of one a woman who lived up in the tree. After a time she came down and the people made her their chief. She had many children, and sent them all over the island, and the Vihuvunagi people are all descended from these children.

Dr. Codrington, who first described the condition in the Eastern Solomons, did not regard it as totemism. He based this opinion on the fact that the Manukama people of Florida may eat the bird of that name and on the statements of the natives that the animal only represents some former famous member of the clan. Further, he believed that the practice of not eating certain animals was of modern growth, and was merely the result of prohibitions laid down by individuals. As an example of such a prohibition he describes how a man of much influence in Ulawa had at his death prohibited the eating of bananas, saying that he would be in the banana, and the natives still said that they could not eat this man when they referred to the prohibition on the banana.

These facts are very interesting in illustrating how totemic restrictions may

grow up or be altered, but they can hardly be allowed to take the Solomon Islands' institution out of the category of totemism. We have here not only what I have called the three cardinal signs of totemism, but we have also the very decided veneration for the totem which sometimes accompanies the fully developed institution. When everything else is so characteristic of totemism, it seems extremely unlikely that the prohibition on eating the totem should have been absent till recent times, and until further light is thrown on the matter, I think the facts must be held to indicate the existence of totemism. The view of the natives that the sacred animal only represents some famous ancestor presents no difficulty, and points only to a condition similar to that of Fiji (see p. 163), in which there is probably confusion in the native mind between descent from the animal itself and descent from a man associated closely with an animal.

The evidence, taken as a whole, points strongly to the condition being one of genuine totemism, but in a relatively late stage, in which the totems and other sacred objects, including human ancestors, are all classed together as *tindalo*, while, so far as the social aspect is concerned, it is possible that there has been a considerable departure from the original condition. The only piece of evidence I can bring forward in favour of this latter position is derived from a place called Kia at the north-western end of Ysabel. When I was in the Western Solomons I was told that at Kia they had a large number of social divisions which appeared to be clans. When in Ysabel I asked the late Dr. Welchman about this, and he said that they had there a large number of divisions in place of the normal three of the rest of the island. Shortly before his death he sent me a list of these divisions showing that each of the three normal Ysabel sections was divided into a number of smaller divisions, each taking its name from an object which Dr. Welchman called a totem. He did not expressly state in his letter to me that these totems were not eaten, but I have no doubt that his use of the term was meant to imply this.

The following is Dr. Welchman's list:—The Vihuvunagi have six subdivisions, taking their names from the *mbahei*, a tree like the banyan; the *mbaumbahulu*, a blue pigeon; the *rumu* or dugong; the *hombarae*, tree with edible leaves; the *mamara* or paper mulberry, and the *etingi*, a large banana. The Dhonggokama had nine divisions, *nggahili*, a white cockatoo; the *taunu* or sun; the *gogosulu* or porpoise; the *nggenggefe* or flying fox; the *rurugu*, the bivalve *Unio*; the *paike* or opossum; the *kopi* or boatbill heron; the *memeha sondu* or toucan, and the *vavalu*, a fish. The last two divisions are now extinct, one having disappeared during the last five years and the other within fifteen years.

The Posomogo have twelve divisions, the *kusa*, (?) kingfish; the *tengge* or turtle; the *posa*, a black banana, wild and inedible; the *ronggisi*, a shell fish, *Pteroceras lambis*; the *kikituru*, a night bird, identified from a picture with the jerfalcon; the *mbulau* or *Conus generalis*; the *etieti* or large areca nut; the *sesehu*, a grass; the *fafalehe*, a clam; the *koilo* or bright yellow coconut; the *taraoa*, a yellow land snail (*Carocolla*), and the *pakehana*, (?) a small sword fish.

Here we have a grouping of what appear to be totemic clans into a number of

larger groups. If these subdivisions once existed all over Ysabel and the other islands where exogamy is still practised and have disappeared, we have a ready explanation of some of the complexities of the present condition. Kia is at the end of Ysabel nearest to Choiseul, and it is possible that investigation of this latter island may help to throw light on the matter and may bring the totemism of Ysabel into relation with that of the islands at the other end of Choiseul, but at present all that can be done is to wait for further information which may elucidate the nature of the condition in the Eastern Solomons which, if it be not the real article, has simulated it so closely.

South Melanesia.

The evidence for or against the existence of totemism in that part of Melanesia lying south of the Santa Cruz group is very slight. I did not visit New Caledonia nor the Loyalty Islands and have no information from that region. My stay in the Southern New Hebrides was too brief to obtain any new material myself, but the Rev. J. W. Mackenzie, D.D., of Fila Island, has very kindly given me a note on the social divisions of the Efatese.[1] On the island of Efate there are ten or more divisions called *naflak*, which are exogamous, each taking its name from a plant or animal, but Dr. Mackenzie does not say expressly that there is any prohibition of the use of these as food. The following are the objects from which ten of the *naflak* take their names: the *namakaur*, a tuber like the arrowroot; the taro; the yam; the coconut; the breadfruit; the *ber*, a kind of fungus; the *namal*, a kind of wild yam; the *nifa*, a plant with large leaves like those of the banana; the *kram*, a shell, and the *wiit* or octopus. Though we do not at present know whether there are any restrictions connected with the use of these objects, their association with exogamy, and their definite function in providing names for the exogamous divisions, makes it extremely probable that we have to do with genuine totemism. If so, we have a striking example of a community where plant-totems are more numerous than those derived from animals.

In the northern New Hebrides my own investigations were limited to the Island of Raga or Pentecost. Here there is the characteristic Melanesian dual organisation, but I could find no evidence that there were subdivisions of the moieties with objects which might be totems. The two moieties take their names from Tagaro and Suqe, and these have no connection with animals or plants. I am indebted to the Rev. H. N. Drummond for the information, however, that the Suqe natives call those of the Tagaro division sow (*matan dura*) and giant clam shell (*matan talai*), while the Tagaro natives call those of the Suqe division turtle (*matan avua*), *matan taqataqa*, a flower, and taro (*matan qeta*) with reference to their origin. These names are generally used only in sport or anger, and it is possible that we have in this derisive use a relic of totemism, a survival of a condition in which within each moiety there were a number of totemistic groups as in many Australian tribes.

[1] See also Macdonald, *Oceania*, Melbourne and London, 1889, pp. 159 and 181.

In the Banks' and Torres Islands I made very full inquiries into facts which might bear on totemism, and in neither group could I obtain any evidence of the institution. In the Torres Islands I obtained a long list of animals that were not eaten, but the abstention had in all cases a natural cause. In the island of Mota in the Banks' group, one of the two divisions of the community took its name from the *talai* or giant clam-shell, a fact of some interest in connection with what was found in Pentecost Island, but hardly enough to furnish a basis for the past existence of totemism. In none of the other islands of the group nor in the Torres group could I discover any connection between the names of the social divisions and those of animals or plants.

While there is thus no evidence of developed totemism, there is one institution of these islands which may possibly have had a totemic origin. Professor Hutton Webster[1] has shown that there is much to be said in favour of the development of secret societies from social divisions such as totemic clans, and it is possible that they may have had such an origin in the Banks' Islands. It is perhaps significant that in the region comprising the northern New Hebrides, the Banks' and the Torres groups where totemism is absent, the secret societies of Melanesia appear to have reached their highest development.

Though developed totemism thus appears to be absent, there was found in the Banks' Islands a group of beliefs which are of the greatest interest in connection with the possible origin of totemism. In these islands devoid of the developed institution there exist beliefs which would seem to furnish the most natural starting point for totemism, beliefs which Dr. Frazer has been led by the Australian evidence to regard as the origin of the institution.

In the island of Mota in the Banks' group there are many individuals who are not permitted by the custom of the island to eat the flesh of certain animals nor to eat certain fruits nor touch certain trees. The ground for the prohibition in most cases is that the person is believed to be the animal or fruit in question, his mother having received some influence from the animal or plant at conception or at some other period of pregnancy.

The course of events is usually as follows: a woman sitting down in her garden or in the bush or on the shore finds an animal or fruit in her loincloth. She takes it up and carries it to the village, where she asks the meaning of the appearance. The people say that she will give birth to a child who will have the characters of this animal or even, it appeared, would be himself or herself the animal. The woman then takes the creature back to the place where she had found it and places it in its proper home; if it is a land animal on the land; if a water animal in the pool or stream from which it had probably come. She builds up a wall round it and goes to visit and feed it every day. After a time the animal will disappear, and it is believed that that is because the animal has at the time of its disappearance entered into the woman. It seemed quite clear that there was no belief in physical impregnation on the part of the animal, nor of the

[1] *Primitive Secret Societies*, New York, 1908, p. 135 *et seq.*

entry of a material object in the form of the animal into her womb, but so far as I could gather, an animal found in this way was regarded as more or less supernatural, a spirit animal and not one material, from the beginning.

It has happened in the memory of an old man now living on Mota that a woman who has found an animal in her loincloth has carried it carefully in her closed hands to the village, but that when she has opened her hands to show it to the people, the animal has gone, and in this case it was believed that the entry had taken place while the woman was on her way from the bush to the village.

I could not find out what interval usually elapses between the disappearance of the animal and the birth of the child, but this did not seem to be regarded as a matter of importance, for it was clear that this belief was not accompanied by any ignorance of the physical *rôle* of the human father, and that the father played the same part in conception as in cases of birth unaccompanied by an animal appearance. We[1] found it impossible to get definitely the belief as to the nature of the influence exerted by the animal on the woman, but it must be remembered that any belief of this kind can hardly have escaped the many years of European influence and Christian teaching which the people of this group have received. It is doubtful whether even a prolonged investigation of this point could now elicit the original belief of the people about the nature of the influence.

When the child is born it is regarded as being in some sense the animal or fruit which had been found and tended by the mother. The child may not eat the animal during the whole of its life, and if it does so, will suffer serious illness, if not death. If it is a fruit which has been found the child may not eat this fruit or touch the tree on which it grows, the latter restriction remaining in those cases in which the fruit is inedible. Thus a fruit used as a taboo mark would be useless for this purpose to one who owed to it his origin.

A case has occurred quite recently in which a girl unwittingly offended against the prohibition. She was an eel-child, and when quite young had gone to fish with some companions on the shore. They caught some fish including an eel, and all were cooked by them on the shore in the same pot, and were then eaten. A few hours afterwards the child began to rave and became quite mad. The people inquired into the doings of the child and found that she had not eaten any part of the eel, but only the fish cooked in the same pot, and this was held to be sufficient to have produced her condition.

I inquired into the idea at the bottom of the prohibition of the animal as food, and it appeared to be that the person would be eating himself. It seemed that the act would be regarded as a kind of cannibalism. It was evident that there is a belief in the most intimate relation between the person and all individuals of the species with which he is identified.

A further aspect of the belief in the animal nature of a child is that it partakes of the physical and mental characters of the animal with which it is

[1] This information was obtained with the aid of the Rev. C. E. Fox and the Rev. W. J. Durrad, to whose help I am very greatly indebted.

identified. Thus, if the animal found has been a sea-snake, and this is a frequent occurrence, the child would be weak, indolent and slow; if an eel, there will be a similar disposition; if a hermit crab, the child will be hot-tempered; if a flying fox it will also be hot-tempered and the body will be dark; if a brush turkey, the disposition will be good; if a lizard, the child will be soft and gentle; if a rat, thoughtless, hasty and intemperate.

If the object found has been a fruit, here also the child will partake of its nature. In the case of a wild Malay apple (*malmalagaviga*) the child will have a big belly, and a person with this condition will be asked, "Do you come from the *malmalagaviga*?" Again, if the fruit is one called *womarakaraqat* the child will have a good disposition.[1]

In the island of Motlav not far from Mota they have the same belief that if a mother has found an animal in her dress, the child will be identified with that animal and will not be allowed to eat it. Here again the child is believed to have the characters of the animal, and two instances given were that a child identified with a yellow crab will have a good disposition and be of a light colour, while if a hermit crab has been found, the child will be angry and disagreeable. In this island a woman who desires her child to have certain characters will frequent a place where she will be likely to encounter the animal which causes the appearance of these characters. Thus, if she wants to have a light coloured child, she will go to a place where there are light coloured crabs.

I inquired very carefully whether a case had ever been known in which the prohibition of an animal as food due to this belief had been passed on to a child or other descendant, but it was clear that such an idea was quite foreign to the beliefs and customs of the people. The taboo is purely an individual matter. In every respect but this, there is the closest resemblance with totemism. In the food prohibition and the belief in descent from or identity with the animal or plant, we have two of the constant and characteristic features of totemism, while the belief in the physical and mental resemblance of man and animal is found in typical totemism as in that of the Western people of Torres Straits.[2] We have only to have the taboo and belief in descent and resemblance transmitted to a group of descendants to have typical totemism. We have here a perfectly natural and intelligible explanation of the origin or of one origin of totemism, and yet it occurs in a people whose social system has no totemic features at the present time, whatever it may have had in the past.

In 1905 Dr. J. G. Frazer[3] advanced a hypothesis to account for the origin of totemism which was based on the belief of certain central Australian tribes which

[1] The disposition of a child may have other causes. A child born in a place where the grass sways from side to side will be like it, undecided, turning from one purpose to another, while one boy now on Mota is fond of playing because an old man dreamed shortly before his birth of children playing round a pool.

[2] *Report Cambridge Expedition to Torres Straits*, vol. v, p. 164 *et seq.*

[3] *Fortnightly Review*, 1905, vol. 78, p. 455.

assign to a child the totem belonging to the place where the mother first becomes aware of the new life within her. In his "conceptional" theory Dr. Frazer assumed that the belief that a child had an animal or plant nature, or one derived from any other object, was due to something which had impressed itself on the mind of the woman at the time of quickening. He suggested that something the woman had recently eaten would probably most often furnish such an object, and as other causes he suggested that if at the time of quickening she had been "watching a kangaroo, or collecting grass-seed for food, or bathing in water, or sitting under a gum-tree, she might imagine that the spirit of a kangaroo, of grass-seed, of water, or of a gum-tree had passed into her, and accordingly, that when her child was born, it was really a kangaroo, a grass-seed, water, or a gum-tree, though to the bodily eye it presented the outward form of a human being." In this passage Dr. Frazer has assumed a series of situations very closely resembling that which I have actually found to exist in the Banks' Islands, and there is definitely established the existence of the belief which forms the basis of his conceptional theory. It is true that in the Banks' Islands the belief and attendant customs have not become the starting point of totemism, but there are many ways of accounting for this, whether it be that totemism never existed in these islands or whether the institution was once present and was lost during the development of the secret societies.

The most important feature of the Banks' belief is that the supposed animal or plant nature of the child is accompanied by a taboo on the flesh of the animal as food or on the use of the plant. Perhaps the most universal feature of totemism is the existence of a restriction of this kind and the conceptional theory of totemism furnishes a ready explanation of this universality. Further, it enables us to understand not only belief in descent from the totem, but also the ambiguity which so often accompanies this belief. Thus in the Eastern Solomons we have seen that while acknowledging their descent from the totem-animal, the people regard this animal rather as the representative of a human ancestor than as the ancestor itself. This belief becomes perfectly natural if the ancestor has two natures, one human and the other animal; if he is, as in the Bank' Islands, an animal in human form. The characteristic features of totemism become perfectly natural if the institution has grown out of such a belief as that of the Banks' islanders, or the similar beliefs suggested by Dr. Frazer.

It is improbable that totemism has had everywhere the same origin, or rather, one of exactly the same kind, and in some parts at least of North America the absence of belief in descent from the totem and the nature of the myths make it probable that there the institution has had its origin in the guardian animal. It is interesting that a belief in a guardian animal should also exist in the Banks' Islands, and it is significant that in this case again the mysterious connection between man and animal is accompanied by a taboo on the flesh of the latter.

A Banks' islander often stands in a definite relation towards an animal which is called his *tamaniu*. This seems to be at the same time the familiar of the person and also a kind of life-token. A person who wishes to have a *tamaniu* goes to one

who has *mana* for this purpose, or probably who is the hereditary possessor of a stone which has such *mana*. This man carries out a rite in which he drinks the juice of certain leaves and then deposits the leaves in some cleft of the rocks; it must be in some place where they cannot be touched by salt water. The people wait till the leaves stink and then watch the cleft to see some animal come out, and when this appears it is the *tamaniu* of the person on whose behalf the rite has been performed. The animal is taken up and put in a suitable place and visited from time to time.

The *tamaniu* has two functions. If its owner wishes to injure anyone he will speak to the man who has procured the *tamaniu* for him, saying that he wishes the *tamaniu* to injure his enemy, and as a result the *tamaniu* would do so in the way peculiar to itself; if an eel it would bite him; if a shark it would swallow him. If a man who has a *tamaniu* falls ill he will go to visit it, or if he cannot go himself will send another to inspect it. In either case the animal is turned over carefully to see what is the matter with it; it may be found that some object may be sticking in its skin, in which case the object is removed and the man recovers. It may be that the animal is found to be dying and in this case when the animal dies, the man will die also.

I was given a striking account of a recent occurrence in connection with a *tamaniu*, which had in this case been brought to Mota from another place. The owner, a blind man, went to the small island of Merig and asked a man there to carry out the appropriate ceremony. A large lizard of the kind called *puasa* appeared, which was brought to Mota and put near the village in the roots of a big banyan tree, where it grew very large. Long after the blind man fell ill and told a friend to go and see the animal, using the words "Look at me," referring to the lizard as himself. The man went alone to the tree, but when he got there, was too frightened to call upon the animal. He was sent again, but this time took some companions to keep up his courage. When they got to the tree the man called the name of the animal, *Rosasangwowut*, and the *tamaniu* came out. It was a very large lizard, much larger than any other the men had seen in Mota. When it came out it seemed sluggish and walked as a sick man would walk. The son of the blind man, who was one of the companions, then asked the *tamaniu* if it was ill, and the creature nodded its head and then returned into the roots of the banyan tree. They went back and told the blind man that he was ill, and not long after he died. At the same time the banyan tree fell and is still lying on the ground across the pathway, and this was taken as a sign that the *tamaniu* was also dead.

Mr. Durrad was told by a Motlav man in the Torres Islands that there was a similar belief in Motlav, but we failed to obtain any account of it, though the manner of our informant left no doubt in our minds that the failure was due only to his reticence. The person who has an animal as *tamaniu* will not eat any animal of that kind. So far as totemism is concerned, the points of interest in the *tamaniu* are this taboo on the flesh of the animal and the clear identification of

the man with the animal. It was quite certain that the connection of man and animal with the attendant taboo was a purely individual matter and was never transmitted to another generation.

There are other cases again of taboo on the flesh of animals in these islands, thus, in the island of Motlav, a man who had certain medical powers might abstain from the flesh of some animal believing that if he did not do so, his medicine would lose its efficacy. Again, it was habitual, in mourning, to abstain from certain foods, but there was no evidence that these taboos were ever transmitted as a similar taboo, described by Codrington, has been transmitted in the island of Ulawa in the Solomons.

We have thus in the Banks' Islands, at least, two beliefs, which, with their attendant customs, have probably formed the origin of totemism elsewhere, and yet they exist in a people who are at the present time singularly devoid, not only of the developed institution, but even of the definite survivals which exist in so many places. Whether we have in the secret societies the evidence of a remote condition of totemism or whether this institution has never had its seat in these islands, it is clear that at the present time the beliefs in question exist in total independence of totemism. If these beliefs, or one of them, have at some time formed the starting point of totemism, it is clear that the institution has lived and died or else has disappeared in an institution in which its presence is only with difficulty to be recognised, and yet the beliefs have continued apparently in a pristine form. The existence of such beliefs in the absence of totemism shows how unjustified it is to assume the previous existence of totemism in a people on the ground of stories of men turning into animals or of animal familiars.

Associated Totems.

It will have been noticed that in most of the Polynesian and Melanesian examples brought forward in this article, a clan or other social division has had more than one totem. In many cases obvious reasons why this should be so can be given. Thus in the case of the multiplication of totems in the mountain tribes of Fiji, recorded by myself, it is clear that while one is the totem of the tribe, others belong to smaller divisions of the tribe. A man has two totems, one as a member of the tribe and the other as member of a *matanggali* or *tokatoka*. If my supposition is correct that the totem of the tribe has been derived from that of some chief,[1] this becomes perfectly natural, for a man will acquire this new totem from the chief in addition to that which he had previously had as member of his division of the tribe. Again, in such a place as the Reef Islands where there is definite mixture of two races, the multiplicity of totems may have been a direct result of the fusion. Another origin may be the fusion of divisions of one people or the absorption of the surviving members of a nearly extinct division, and I have suggested that this may account for the condition which is now to be found in the

[1] *Man*, 1908, p. 134.

Eastern Solomons. It would be natural that the whole division should adopt the totems of the elements which have been fused together. A still further explanation is to be found in the transition from matrilineal to patrilineal descent where this has taken place ; thus Dr. Haddon and I have suggested[1] that this may be the origin of what we call the subsidiary totems of the western tribe of Torres Straits.

There is, however, a case in which none of these explanations seem directly applicable, viz., in the association of trees and animals which has been recorded by de Marzan in Fiji.[2] This seems to furnish a parallel to the condition which Dr. Seligmann has described[3] as linked totems in South-east New Guinea. In this region each social division has four totems, one a bird, another a fish, a third a snake, and the fourth a plant ; a division having in two cases more than one bird. The divisions owning these totems have sections living in hamlets, and there is the possibility that there may have been a process of fusion, but even if this were so, it is extremely unlikely that the zoological characters of the totems of the elements should have been so nicely adjusted as to produce the result which Dr. Seligmann found.

From a native of the Trobriand Islands whom I met in the Solomons I learnt that a similar linkage of totems occurs in those islands. It appears to be less developed than in Dr. Seligmann's case, but this may be only apparent, the result of the incompleteness of my information. The people of the island of Kiriwina, to which my informant belonged, have four exogamous divisions, each of which has a bird and a fish together with another animal, but it is noteworthy that none of the four divisions take the name of any of their totem animals or plants, for each division has also a plant totem.

The Malasi have as bird totem the *bubuna*, a white pigeon, while of four-footed vertebrates they have the pig. The Likugu have the *munuveka* or fish-hawk and the dog. The Likosisiga have the *karaga* (*Eclectus polychloros*) and the crocodile, while the fourth division, the Likolibuta, have the *geigila* or crimson lory and the monitor lizard. Each division has a fish in addition to its bird.

Dr. Seligmann informs me that the example of linked totems from the Trobriands given in *Man* (1908, p. 163), applies to the Lukugu division, and adds that while the names of the fish totems of each clan were doubtful, there was no difficulty in ascertaining the plant totems of each division. Further, in every case he found the relative importance of the totems to be bird, four-footed vertebrate, plant and fish, while in addition there were upon Kiriwina a number of birds which were associated with the chief bird of each clan, but were regarded as of little importance.

The most remarkable feature of the totemism of Kiriwina is that though the people have matrilineal descent, it is the bird and fish of the father which may not be eaten, while the totems of the mother, and therefore of a man himself, may be

[1] *Report Cambridge Expedition to Torres Straits*, vol. v, p. 180.
[2] *Anthropos*, 1907, vol. ii, p. 400.
[3] *Man*, 1909, vol. ix, p. 4.

eaten. There is evidently a belief in descent from the totem-bird, for a man will sometimes speak of it as *tabugu* or "my ancestor" (used also for grandparents and for the father's sister).

There is a very close resemblance between the totemism of the Trobriands and that of South-east New Guinea, where also the father's totem receives more regard than that of the mother. The Trobriand condition is strongly suggestive of an old totemism which has become ineffective, while on the top of this there has come, with increasing recognition of relationship with the father, a new form of totemism characterised by the linkage which is its peculiar feature, a feature which the Trobriand example, however, still leaves to be explained.

In de Marzan's Fijian example we have an association which seems distinctly comparable to the linkage of New Guinea and the Trobriands, though there are only two instead of three or four linked elements. In Fiji the natives have a theory to account for the linkage, believing that the tree was primary, and that an animal found under each tree when they went to a new home became associated with it, and this native theory probably represents the kind of process upon which such linkage depends. It is certainly a late development of totemism.

An interesting example of a condition which might be on the way to linkage was observed by me in Guadalcanar. The Haumbata division of this island have two animal *tinda'o*; one which is invoked by a man who wishes to kill his enemy on land, while the other is invoked when the destruction is wished for on sea, and my informant, in speaking of these two, said that one *tinda'o* belonged to the land and the other to the sea. To the wizard, the possession of two such sources of help would appeal greatly, and it does not seem unlikely that the people of other divisions might like to have such a division of function themselves, and if they only possessed a land animal as totem might choose another from the sea. These two totems would certainly become the most prominent, owing to their serviceableness and we should then in course of time have a definite linkage of land and sea totems.

In Guadalcanar we thus have a condition which suggests how maleficent magic might produce a linkage of totems belonging to different classes of object, and it is not, I think, difficult to see how the beneficent magic which promotes the fertility of living creatures might similarly lead to such a linkage as that of the New Guinea and Trobriand examples.

NOTES ON THE BAGESHU.

By the Rev. J. Roscoe.

These brief notes are the outcome of a visit to Mount Elgon during June and July, 1908; they are only intended to clear the ground for further and fuller investigation at some future date.

The Bageshu are a Bantu race living chiefly upon the east and south-east slopes of Mount Elgon. They are a numerous people, estimated at not less than a million. They are a most primitive race and stand low indeed in the human scale; they are treacherous and utterly unreliable to persons outside their own clan, they are, undoubtedly, cannibals, though each clan, when questioned, denied the fact and pointed out another which followed the practice of eating the dead secretly. Their land might be called a land without graves owing to the practice of throwing out the dead towards evening under the pretext of leaving them for the wild animals, whereas the old women visit the bodies and take what they consider the prime pieces and leave the refuse to the wild animals.

Only people who have died from small-pox, suicides and thieves who have been killed in the act of entering a house by night, are buried; because they say they wish to suppress the disease, and in the other cases they are afraid of the ghosts.

The tribe has traditions that at one time they lived on the mountain and inhabited the caves which are abundant on the upper slopes. They say they worked down gradually each year, taking in fresh land as they descended, and that they followed lines straight down, each clan refraining from infringing upon the boundaries of its fellow clan. In this way they have now reached the lower slopes, and here and there are at work in the valleys.

These tracts are regarded as freehold lands of the clan and are most jealously guarded by them.

The sides of the mountain are terraced, and offer ample space for good gardens, and sites for villages; copious streams of excellent water flowing from the summit provide for the needs of the people, and also water the gardens through which they flow. Many of these streams form beautiful waterfalls, dashing down some hundreds of feet from the heights above upon the rocks below. There are numerous natural caves which have for ages past formed the strongholds of the people, who, in times of danger and raiding from their stronger foes, resorted to them until the enemy, tired out, moved on to some other more profitable field. Some of these caves were always provisioned, so that when an alarm was given, the people rushed

off, driving their cattle along the steep paths into them. Most of them were inaccessible except by the one path which the people were able to guard. The cattle had to be kept in the caves during the day, and by night the men took them to pastures near, herding them under cover of the dark.

On the sides of the mountain visited, there was no trace of permanent occupation of the caves, nor was there any reliable information of there being cave dwellers; the caves are only used as places of refuge in the time of danger and war.

Clans.

Though it was impossible to find totems amongst them, there was every indication of the system; the limited knowledge of the language, however, made it impossible to get at them.

The general attitude of one clan to the other is that of hostility, though there are times when they intermingle freely and are on the best of terms. Each clan has its own district and lands, and holds aloof from the next neighbour except when there are festivities which draw them together.

The women may always go where they wish and never meet with any opposition even when the clans are at war one with the other.

Names of the Clans.

Babesi.	Basihu.
Banyuwaka.	Bamasiki.
Bankoki.	Bakonde.
Baholasi.	Bayobe.
Bahuku.	Basane.
Baduda.	Balusekya.
Basukuye.	Balukulu.
Baliyenda.	Bamoni.
Baluke.	Batunduye.
Balage.	Babangobe.
Bakike.	Batisu.
Bapete.	Bambobi.
Bakikaye.	Bakumana.
Babeva.	Bafumbe.
Bakumunya.	

Marriage Customs.

As stated above, each clan seeks wives outside itself from one of its neighbours. There are no arrangements between the young people until after puberty; the advances are made by the men, who approach the women, though there is no notion of love between the parties. It is purely a financial transaction between the elders or parents of the couple, though a man seeks to find a woman who is strong and

able to work to be his partner. Blood relationship is a bar to marriage, that is, a man may not marry any one of his father's clan and he also avoids his mother's clan; all the women of that clan are his mother's near relations, those who are her real sisters he calls his mothers.

In most cases the youth asks his father to go and make the arrangements with the girl's people as to the dowry. The parents, with some members of the clan, settle the sum to be given after asking the girl if she wishes to marry the youth; it then becomes a matter of time for the youth to obtain the cattle and other things asked for. The amount is generally six cows, from six to a dozen goats, and a few fowls; these the youth gets either by means of trading or begging amongst the members of his clan. When the sum has been paid the girl is claimed, but always remains one month longer at home, during which time she is feasted and made to look as well as possible so as to do credit to the parents' and to the clan to which she belongs. At the expiration of the time a number of her friends come to take her to her husband's home. They go in the evening and are allotted a house into which they crowd, the bride being also with them; for three days they remain there, and each morning go out into the bridegroom's garden and dig. The more land they can reclaim the better for the bride and her husband. The bridegroom's mother cooks for them daily and asks them to come to have their meals; custom, however, forbids them from complying, they have to obtain their food secretly, and also to eat it in secret. On the fourth day, they go to the bride's village, taking the bride back with them. A substantial meal awaits them, after which they dance and return to their homes. The bride remains another month with her parents, who prepare large quantities of beer which they send together with a goat and the bride to the bridegroom. The bride has only one attendant with her on her second journey, who stays one night and then returns to her people. The marriage is then consummated, and the wife goes about her daily tasks as an ordinary married woman.

The people are all polygamists and may marry sisters of the first wife if they wish; there are no restrictions as to the number of wives, nor how many they may take from one family.

Adultery.

A man who commits adultery is fined heavily; the money goes to the man who is wronged. In the case of fornication, the man has to bring the dowry and marry the girl. If he fails to do this and some one else marries the girl, the father of the child loses his child, and it is counted as the son of the man who pays the dowry. A woman who has a child prior to marriage is not despised, nor does this in any wise detract from her chances of marriage, on the contrary it is a proof to the man who wishes to marry her that she can have children, and thus adds to her value.

BIRTH.

It is essential that every woman should have children; if she fails to do so, her chief value in the eyes of her husband has gone. She is given a reasonable time to test her, and her husband will do all he can to assist her; he will pay the medicine men their fees to make drugs and thus give her every chance to become a mother. Should his efforts fail, he returns her to her parents, and demands the dowry he paid for her.

Though there are no special taboos for regulating the diet of a pregnant woman, still she takes precautions against various kinds of food which she thinks may do her child harm, and is more careful about herself and the work she does.

The husband of the woman is not allowed to take violent exercise, nor may he climb a tree, or go on to a house roof, or climb rocks, lest he should slip or over-exert himself, and thus bring on a miscarriage for his wife.

When the time draws near for her confinement, she asks some friend to come and act as her midwife; she is not, however, expected to need any assistance. If she is of a nervous disposition, some friend will come and stand behind her and hold her as she stoops, and shake her up and down until the birth takes place. They cut the umbilical cord quite short, and have no regard to it, nor any ceremonies connected with it. The afterbirth is buried in the house near the fireplace. For three days the mother remains in the house and is waited upon by the midwife, the hut is swept out and the mother washes herself and resumes her ordinary duties. When the child is old enough to sit up unsupported, it is named. The father gives it a name of one of his ancestors, the ghost of the person whose name has been adopted is supposed to take charge of the child, and should it be an illegitimate one, the ghost will kill it. In cases where a woman has been unfaithful, she gives the child another name secretly, and asks the ghost of the ancestor of the real father to protect it from the other ghost of her husband's ancestor.

If a child is sickly after being named, the parents consult the medicine man, who tells them the reason and prescribes for it. If he ascribes the illness to the guardian ghost, they change the child's name and call upon the new guardian ghost to protect the child.

TWINS.

When twins are born they beat drums with a special rhythm which conveys the information to the relatives. The relations hurry together to the place and hastily collect building materials and build a hut into which both the parents and the children are put for three days. They leave a small aperture through which the food is handed to the parents inside. On the third day one of the relations comes and cuts a doorway into the hut and allows the parents to come out; there is general rejoicing, feasting and music; after the usual bathing and purificatory

ceremonies are over the parents make a tour of visits to relations and friends, where they feast and dance. The parents have to partake of food in common; should one of them either eat or drink without sharing with the other, one of the children will fall ill and die.

The children are supposed to be the gift of the gods.

Puberty and Circumcision.

Both boys and girls grow up at home in their parents' house. At the age of about twelve boys are expected to undergo the operation of circumcision, and become initiated into the clan mysteries, and take up the duties of full members of it. The preparations for the circumcision ceremonies are made after the harvest is gathered in, when the moon is full. The boys who have summoned up courage to brave the dangers, meet at the appointed village a fortnight before the ceremonies take place. Their bodies are smeared over with white clay from head to foot and they parade the village daily singing and dancing.

On these occasions people from every clan meet together, old quarrels and clan feuds are for the moment forgotten and they mix one with the other as the greatest of friends.

On the day of the operation the boys are smeared over with black clay in the early morning, and each set go to their own village to beg goats and fowls; the chief of the clan, at whose village the ceremonies are to take place, kills an ox for a feast for the young people, a large piece of the meat is put upon the spike on the hut in which the boys are living, to be reserved for the end of the ceremony. On the way back from their villages the boys collect all kinds of missiles which they take back with them, and as they enter the village they attack it, throwing the missiles, and shouting, and dancing in their onslaught of the unseen foe. The boys are next brought into line by an elder, whilst an admiring crowd of both sexes stand to one side to see the performance. In front of each boy a round pad of grass is placed on the ground, and an egg put upon it; an old man then gives to each boy a bit of root to chew which has medicinal properties to stop the bleeding. The headman of the village next comes and addresses the boys, tells them about their customs, history, marriage customs; he tells them also who are the friends of each clan and who are its enemies, and impresses upon them the necessity of being brave to fight the battles for the tribe. After he has ended his address another man comes and smears each boy on the chest with a mixture of the contents of the stomach of a newly killed goat. Each boy then repeats a formula after the old man and jumps into the air three times, the first two leaps he alights with a foot on each side of the grass pad, the third time he comes down upon the egg, smashing it to atoms. Another elder now comes to them and pulls the foreskin of each boy well forward as he passes along the line. During this time the surgeon is in hiding in a hut near by, sharpening his knives and making his final preparations. Directly he sees the man has passed along the line, he slips

out, and rapidly cuts off the foreskin from each boy and throws it over his shoulder without looking where it goes. He looks to see that the operation has been neatly done and trims off defects, and passes on to the next boy. When he has finished the whole row he rushes away and hides again. The boys have to stand rigid with their legs apart until the bleeding ceases. Some of the older women pass along the line after the surgeon to see that the work has been well done, whilst others bring plantain stems and place them behind the boys for them to sit upon in case they grow faint. Another man comes and smears some of the blood from each boy on his chest where the mixture from the goat's stomach has been smeared.

The foreskins are collected and buried near the chief's hut; when this is done a man mounts the chief's hut and cuts the meat into small bits and throws it down to the people, who eagerly struggle for it, because it is supposed to bring special boons to those who get it and eat it. When this ceremony ends the boys are conducted into a house set apart for them, where they remain until they are quite healed.

Girls at Puberty.

The girls have a ceremony which they undergo at the same time the boys are undergoing their circumcision. They have a bit of flesh cut from either side of the *labia majora*, and then make the scarifications peculiar to them on their foreheads and stomachs. These scarifications are done with a crescent-shaped flesh hook; at one end of the hook is a ring for carrying it on one of the fingers, the other end is sharpened to a needle point. This weapon is used either by the girl herself or by one of her friends who help her to scarify herself. The flesh is pinched up between the thumb and finger and the hook run through it; several of these places are done at a time and fine dust from the wood fire rubbed in. As a rule the wound heals leaving a raised lump; should it heal with a smooth surface the wound is reopened and more ashes applied.

Both boys and girls at this time extract the front lower incisors.

When all the boys and girls are healed, the chief of the village and one of the elders take a goat and a fowl in the early morning and visit a sacred tree in the neighbourhood; they kill both the goat and the fowl at the root of the tree; the goat they eat, but leave the fowl on the spot. After the meal is over they proceed to a sacred pool, which is said to be guarded by a snake; they take with them a pot of beer, which they place by the pool, and wait until the snake has drunk the beer, and is intoxicated, when they seize it and break its fangs, rendering it harmless.

Directly the chief and elder leave the tree all the young people in the village who have undergone the rites of circumcision, visit the tree and follow them to the pool. Upon their arrival at the pool, the sons of chiefs first enter the water and wash, and after they have finished the other boys and girls follow them into the

water. This purification they say makes them quite well and strong and enables the girls to have children.

In the evening the dancing commences together with beer drinking, and is kept up for several days. During this time there is the fullest license given to both sexes, men and women have promiscuous intercourse without any restraint. Sometimes when the beer is finished at the one village they move to another where more beer has been prepared, and continue the dancing day and night until the beer is ended.

Sickness and Death.

When a person is sick the relatives send for the medicine-man to divine the cause of the illness. He consults one or other of his tests and generally ends by discovering some charms or medicine hidden away near the house which he asserts have been the direct cause of the illness; he therefore goes on to prescribe some potions for the sick man to drink, and soon heals him. His fee for this service is a goat.

In some cases the medicine-man decides to remove the illness by magic. He takes a fowl and rubs it against the place where the pain is severe, after this he goes to some waste land, digs four shallow holes, kills the fowl and divides it into four parts, and places a part into each of the holes; he then goes through a form of words, and commands the ghost to leave the man alone. One portion of the fowl he takes for the sick man, one is his own, the third is for the deity, and the fourth is for the troublesome ghost.

Sometimes herbs are rubbed over the sick man and buried in the path. It is believed the first person who steps over the herbs will contract the disease, which is lying in wait for someone, having been removed from the person who was sick.

In other cases when the sick person is a rich man, a goat or cow is killed, a small hut is built near the sick man's house in honour of the ghost which is supposed to be troubling the man, some of the meat and the blood are put into the little hut, whilst a large piece of the meat is placed upon the spike upon the top of the house. When the people gather together for the ceremony the medicine-man climbs on to the house and cuts the meat up into small pieces and throws it amongst the people, who snatch it up and eat it. In this way the sickness is scattered over a large number of people and is harmless, and they suffer no ill effects from it, whilst the sick man recovers.

If these remedies fail and the sick man dies, the relatives seek revenge upon the person who is charged by the medicine-man with being the cause of the death.

Directly a person dies the mourning begins, the body is generally kept a few hours only in the house, and then carried and deposited near by in some uncultivated land. The mourning goes on for three days, when the mourners shave their heads, and all except those closely connected with the disease go about their

ordinary work. The near relations continue to mourn for three months longer, when an ox is killed, a feast made, and they again shave their heads and the mourning ceases. At the feast the principal members of the clan meet and appoint the heir, divide up the wives, and the cattle; the latter going chiefly to the members of the clan and not to the heir.

Hyænas are sacred animals, because they eat the dead and are thus supposed to be related to the people.

GHOSTS.

The ghost of a person remains about the house the deceased used to inhabit, and from time to time makes its wants known to the inmates chiefly by dreams. Beer and food are placed near the door for the ghost, the person who places them outside calls to the ghost to be kind to the children, and not to harm them in any way.

RELIGIOUS BELIEFS.

Their religious beliefs are in a very crude state, they have no permanent temples nor appointed priests. The medicine-man is the repository of wisdom and skill, and acts as the medium of the deities. When occasion requires, the temple or hut is rebuilt and the offerings made, but directly the cause of anxiety passes, the temple is neglected and falls into ruin until required again, when a new one is built.

Mwanga is the name of the snake they worship; he has his place on a hill where his temple is built, when required, and has his special medium named Namwangala. He has power over disease, and makes known the cause of sickness, and tells how it is to be cured. Offerings of goats and fowls are given to him to appease him when sickness appeared. Women who are childless take offerings to him and beg for children.

ROCK SPIRITS.

Most large rocks are supposed to be animated. At various times, when the elder of the village orders it, offerings are made of goats, fowls, and beer, whilst the children take plantains and small offerings of food. The rock spirits are supplicated by parents when their children are sick, and delicate people go to them in quest of health and strength. The rock spirit generally speaks through an elder of a village by means of dreams. After a vision the man takes a couple of fowls, one of which he kills at the base of the rock and eats on the spot, the other he takes home and keeps it to breed. With the young which he exchanges he obtains a goat, the young from the goat he barters for a cow, and thus becomes a wealthy man.

The Spirit of the Waterfalls.

There are also believed to be spirits of the waterfalls which fall in numbers from the precipitous sides of the mountain, dashing down hundreds of feet to the lower slopes.

To obtain the blessing which these spirits are supposed to bestow, the people go with vessels and catch the water as it falls, take it home and sprinkle it over the heads of the children, who are supposed thus to receive health and strength.

Rain Making.

There are special men whose duties are to regulate the elements. They bring the rain when it is necessary, and cause sunshine when it is required. They have not always the most pleasant time, because their failure to produce the necessary rain is never attributed to inability, but to disinclination to accommodate the people. The people first try persuasion, bring presents and offerings to them, begging them to act for them; if the rain does not come they lose patience and demand it; if the men persist in their obstinacy, and if the rain does not come they resort to strong measures and deeds of violence. They rob them of their cattle, and if the rain does not come then, they proceed to burn their houses down, and the rain-makers are fortunate if they escape a severe handling, or even death.

The method commonly practised by the medicine-man is to take a couple of fowls which have been brought by the suppliant, and kill one of them by striking it on the head with a stick; he cuts it open by making an incision from the under side of the beak down the breast to the tail, then lays it open and examines the entrails for the markings upon them, and for any speck. These enable him to tell when the rain will fall. Sometimes he replaces the entrails and puts the fowl out in the sun for a time, and after the exposure he shakes the fowl about; if the entrails make a noise he prognosticates there will be strong wind which will destroy the crops. Having thus completed his investigations with the one fowl he proceeds to work upon the second, in the same manner, to see if it confirms the oracle from the first one. If the rains do not come the people take the strong measures mentioned above. If the strong measures fail, the people are reduced to seeking out the man, and again try by flattery and presents to obtain his help. They rebuild his house and restore his cattle and make reparation for the ill he has suffered. The man may agree to go to the extreme measure of a visit to the deity on the mountain which he professes to fear doing. A black ox is brought to him and several elders accompany him to some part of the mountain where the ox is killed, and they eat the meat except one leg; this, together with a quantity of beer, is taken to the priest who is in charge of the sacred pool on the mountain, as his fee to undertake the work of obtaining the rain from the water spirit. A huge snake is said to live in the spring, and attacks any one who approaches it to draw water. The priest and the rain-maker first make a clay trough into which they pour the beer, and the priest then takes his stand near this and puts a long beer tube into

the spring. No sooner does he put the tube into the water than the snake rushes out and winds around him; the smell of the beer, however, saves him from death because the snake makes for it and drinks, and is soon overcome by it and becomes helplessly drunk. The two men at once break its fangs and render it harmless, and bring a number of water pots which they fill with the sacred water, and place near the well. The water thus drawn is sure to bring the rain, which will continue to pour down daily until it is stopped again by the priest.

When the people have had enough rain, they come again to the rain-maker, taking a substantial present of goats, fowls, and beer, and he goes again to the priest on top of the mountain, and they make the snake drunk once more, and overturn the pots of water, leaving them empty. The sun then begins to shine again and ripens the harvest.

WARFARE.

The wars are principally inter-tribal, though on rare occasions they combine to make a stand against a common enemy. The chief causes for the wars arise from theft, or infringing upon the land of another clan. They jealously guard the boundaries of their land, and if another clan steps over the bounds to cultivate, they enforce their rights by resorting to arms.

The men arm with bows, arrows, shields, spears, and stones. There is no order in battle, though they move in a compact body. Every now and again some one breaks out singly and rushes upon the foe. Sometimes two men may rush out to be met by a couple of the opposing army; it thus becomes a series of hand to hand fights, whilst the bulk of the army stands and look on. When one or two have been killed and several wounded the battle ends.

A man who has killed another is not allowed to return to his own house on the same day, though he may go back to his village; he goes into the house of a friend to stay the night. He kills a sheep and takes the contents of the stomach and smears his chest, his right arm, and head with this. His children are brought to him and he smears them in the same manner. He then takes the mixture and smears each side of the doorway and throws the rest upon the roof of his house. For a whole day he must not touch food with his hands, but takes all his meals by picking up the food with a couple of sticks and thus conveying it to his mouth. These restrictions do not extend to his wife; she is not only free from them, but goes to mourn for the man whom her husband has killed if she wishes to do so.

DANCES AND MUSIC.

The people seem to be very fond of music, especially of singing, which they accompany on some instrument which can keep the time for them.

Their musical instruments are the drum, harp, and bells for the thighs and ankles.

In their dances they usually march in circles, both men and women singing and marking the time with their feet, especially the men who have the bells either

upon their ankles or thighs, whilst the others use the upper arm which they raise and bring down with a ringing smack upon their sides. In the distance to one side of the circle is the drum or drums which are kept going the whole time without intermission. The dances are generally performed after the circumcision rites are ended, where there is a good supply of beer.

The harps are used by the individual for private use in the home or to sit out with a few friends who accompany it with songs. Girls have a small harp made of reeds which they use to accompany their amorous songs to excite the youths.

Dress.

Boys from birth to the time of circumcision go absolutely nude, and no man who has not been circumcised may wear any clothing. In some cases, youths shrink from the operation and go on from year to year postponing it. They may find some women who agree to become their wives and they may have families, but they can never claim to be full members of the clan, nor may they wear the dress peculiar to those who are full members. After the circumcision ceremony, boys wear a goat or sheep skin strung round the neck in front, and hanging down long enough to cover the member. The skin is often well dressed and decorated with an edging of beads of divers colours.

Young girls likewise go naked until the time of puberty. Their dress is a band for the waist made of plantain fibre, the strands of the fibre are twisted up into cord and fastened to the band and hang down some 18 inches. The owner is very particular about tying these strands together at the ends. One or two strands are plucked out and wound round the ends, binding them together like a rope; the ends are then cut to a certain length according to the owner's fancy. This dress is tied round the waist with the cords hanging down behind, the end is passed between the legs and threaded under the belt in front so that it hangs down over the belt. This is the complete dress of a married woman. A widow wears her grass apron hanging down at the back not passed between the legs. Many women wear a small grass apron 6 inches wide and 2 inches deep, but this is introduced from the Teso people.

Ornaments.

Men and boys have both of the lower incisors extracted; they pierce small round holes around the edge of the ears and insert bits of grass or brass rings, and they also pierce the lobes of the ears for larger rings.

They wear roughly-made iron bracelets and four or five coils of iron rings round the upper arm. Numbers of them however have no ornaments; they have either bartered them or are too poor to get them.

Women scarify themselves profusely, they have two rows on their foreheads, from the cheekbone on the one side round to the cheekbone on the other side. They also have five or six rows of these marks down the chest and stomach.

Women extract three or four of the lower teeth and also pierce a hole through the lower lip. Into the hole they insert a small wooden button three-eighths of an inch in diameter and an inch thick, but more frequently they wear a lip stone inserted, which is some two inches long and gently tapered from the thick end, which is half an inch in diameter, to about a quarter of an inch at the other end. The stones are always white.

They wear roughly-made iron and brass rings on their fingers and toes and the flesh hooks which are used for scarifying their bodies are frequently worn on one of the fingers. Like the men, they wear the roughly-made iron and brass anklets and bracelets. They also wear bands of coloured beads round their necks and waists, and iron rings rubbed bright around their necks.

Cow Keeping.

They possess a small breed of cows which manages to climb and browse on the mountain sides like the goats. Both boys and girls herd the cows, which often mingle with the goats and sheep for herding. Both sexes are allowed to milk the cows; they use earthen pots for milk. The milk is as a rule boiled, grain being added as it boils; it is seldom drunk whilst fresh and warm. When a girl arrives at the age of puberty she is taken from herding, though a woman who marries a man who has cattle and no servants to herd them, will take them out in the early morning whilst her husband goes to cultivate. He returns from the field about ten o'clock and relieves her from herding and she returns to her household duties. The women always churn, and wash the milk pots.

When a cow has calved, the calf has the first day's milk, but on the second day the cow is milked and the milk boiled until it becomes a hard cake; the owner of the cow calls his relations to come and eat the milk with him and his wife. After the meal, the cow is milked in the ordinary way and the milk may be mixed with that from other cows.

They are fond of bleeding the bulls and cooking the blood, which is considered a great delicacy. The mode of drawing the blood is to tie a cord tightly round the animal's neck until the artery swells out, and shoot an arrow, which has a guard on it to prevent it from going in too deeply, into the artery. They draw off two or three pints of blood which they boil and make into a pudding. The animal soon recovers from its loss and is apparently none the worse for it.

Cultivation.

The cultivation of the plantain is their principal work, though grain is extensively cultivated and eaten. The plantains grow in the valleys and moist places on the sides of the mountain. Though grown in fairly large quantities they do not meet the needs of the people entirely, and they have to fall back upon the millet and sweet potato. The millet grown is a very small kind and is made into a coarse kind of porridge.

Fields for millet are roughly dug both by men and women towards the end of the dry season, and directly the rain comes the grain is sown. Both sexes take part in the sowing; shallow holes are made by one person who goes in front with a hoe and with one stroke lifts enough earth to make a place for the second person who follows with the grain, drops in a little and covers it with the side of the foot. In this manner maize, peas, and a variety of dwarf beans are sown.

Semsen is sown in small plots, to be used as a salad or savoury to eat with other kinds of food. When the harvest is ready to be reaped, both men and women go out to reap it and bring in each night what they reap. They use a small knife for reaping, with a blade not more than two inches long, and cut off the heads of the grain and drop them into baskets. When the grain has dried for a day or two they thrash it out with sticks and stow it.

When any person wishes to break in new land he has to obtain permission from the chief before he commences to work. The women do the initial digging and the men follow and prepare the ground for the seed. A small pot of seed is sent to the medicine man, who mixes it with herbs and pronounces over it some formula which ensures it growing; this seed is mixed with the general seed and imparts the blessing to the whole crop. When new land is being sown, a pot of beer is taken and poured upon the new field to secure the favour of the earth spirit.

Both the men and women work amongst the plantains, but the weeding of the grain crops devolves upon the men.

At harvest time an offering of first fruits together with some of the last year's corn and a fowl are sent to the medicine man for the deity before anyone dare touch the new corn.

New Moon.

At each new moon the drums are beaten and all the people turn out to dance. Children especially are expected to take part in the dances as they derive benefit from the moon.

Buildings and Villages.

The huts are always round with conical roofs. There is an outer wall from two to four feet high, which is made by driving pointed stakes into the ground close together and forming a circle the diameter of the intended hut; these stakes are bound together at the top by strong bark cords, or a kind of creeper. In the centre a stout pole is let into the ground according to the height required for the hut; from this the rafters run to the walls. These rafters, radiating from the centre pole to the walls, are kept in place at equal distance apart by rings of reeds. These rings are tied at regular intervals to the rafters, being larger and larger as the walls are approached. The roof is thatched with a coarse kind of grass and the walls are plastered with clay on the inside; the floor is smoothed and a little fresh clay carried in and well beaten with short sticks, and as it dries

it is rebeaten to fill up cracks and finally smeared over with cow dung and clay. The door, either of reeds or twigs, is made so that it can be pulled to one side, like a sliding door, a couple of posts keeping it in position by night. They do not as a rule fasten the doors, but only slide them over the opening to keep out wild animals. The fire burns in the middle of the floor and the smoke finds its way out through the grass roof as it can. The family lie on the floor round the fire by night, they have no bed nor bedclothes, they lie on the bare floor with the children around them. During the day the door is merely closed when the members are away at work; should a man wish to make his hut doubly secure he places his stick over the doorstep, and anyone crossing this realises he will not only be dealt with as a thief, but also have to meet the owner in a fair fight.

Huts are clustered together and surrounded by a growing fence; in some places there are only a couple of huts, whilst in others they number twenty or more. There are no sanitary arrangements, all the members retire to the nearest piece of waste ground to relieve nature.

Government.

Each village has its elder who tries petty cases in his own village, whilst more serious cases between village and village go to the chief of the clan. When cases are taken to the chief, the accuser takes a goat or a cow as a fee before the chief will summon the accused. If they are not satisfied with the chief's decision, they appeal to the fire test. They each take a fowl to the medicine man who hears the case, he then heats an iron hoe and applies it to the leg of first one and then the other; the one who is burned is the guilty person. Should they both be burned, they are both considered equally guilty.

Theft committed by day is punishable by a fine; the medicine man discovers the thief by his divination, and the fine is generally a cow. Theft by night is done usually by digging under the walls of the house. Should the owner be waked he stands by the place where the sounds are heard and waits for the person to come through; directly the head of the thief appears the man spears him, and then raises the alarm: the people rush to his aid, and the thief is despatched without mercy. The next day the body is taken to some waste land and burned.

Murder.

When men of the same clan quarrel and one kills another, the chief of the clan tries the case, and the murderer has to leave the village and pay the father of the murdered man a sum sufficient to buy a new wife. The murderer has to take a goat and kill it, and smear his chest with the contents of the stomach of the animal, and go by night to the hut of the dead man, and throw some of the mixture over it.

If a man kills one of another clan, the members of the clan seek out either the murderer, or, failing him, some one of his clan about the same age as the person

killed, and put him to death. If they are able they get a son of the murderer and they will sometimes wait a number of years until a child grows up in order to kill him when he reaches the age of the man who was murdered.

When two contending clans wish to make peace the chiefs come together to some place and sit down, a dog is brought and one takes hold of its head and the other of its hind legs, whilst a third man severs it in two with a large knife. The dog is thrown away and the clans are free to intermingle without any fear.

There are no taxes or rents paid to the headmen or chiefs, but only such presents as the individuals care to take; they usually take presents of grain at harvest time. The only compulsory fees are those for trying cases. The chiefs have little or no power over their people, theirs is a nominal chieftainship.

Games.

Their chief amusement is dancing, which seldom takes place, except at full moon, new moon, and after the circumcision ceremonies. They have wrestling matches also, and boys have a game of kicking; the latter is not so much a game of strength as of agility.

Hunting.

Antelopes and small game are hunted with the spear and club. They run the animals down and either club or spear them to death. Often the division of the meat causes angry words which end in a free fight.

Boys trap herbivorous rats which they, and also their elders, consider a delicacy.

Leopards are hunted with the spear and shield; numbers of men go out and encircle the place where the animal is supposed to be in hiding. They beat down the grass as they advance, and all sing and shout at the top of their voices, until they reach the spot where the beast is. They try to club it down before it has time to spring, and present their shields if it springs before they have clubbed it, to save their bodies from its claws, whilst another either spears or clubs it.

Hyænas are followed and clubbed to death if they take any goats; as a rule they are left in peace because they clear off the remains of the dead.

Elephants are hunted from trees, the men go out and select their trees and climb into them, taking with them several spears. Beaters then turn the animals towards the trees and the men spear them as they pass under. Sometimes it takes a great many spears to bring down one of these monsters if none of them have touched a vital place. The hunters follow up the wounded animal for days until it is left by the herd owing to sickness; they then surround it and kill it. The first man who speared the animal claims the tusks, whilst the beaters and others hunters take a share of the meat.

PATRICK COTTER—THE BRISTOL GIANT.

By Edward Fawcett, M.D., Professor of Anatomy, University College, Bristol.

[With Plate XV.]

This giant, who was well known during the eighteenth century, was for the greater part of his life an inhabitant of Bristol. Born at Kinsale in Ireland of humble parentage he followed the calling of a bricklayer, but finding his great size inconvenient was glad to embrace the offer of a Bristol showman to come over to this country and be exhibited at a salary of £50 per annum. Being, however, sublet to another showman, Cotter struck, and was thrown into a debtor's prison on a fictitious charge of debt. Fortunately for him a well-disposed Bristol citizen, who happened to have business with the sheriff's officer, noticed Cotter, and being struck not only with the poor fellow's misery but by his simple demeanour, made inquiries about him, with the result that Cotter was set free and the contract declared void. The interest of this benefactor did not cease here, for he gave Cotter a sufficient sum of money to enable him to start business on his own account, and at the Bristol Fair held at the time of his release he exhibited himself with such success as to realise £30 in three days. From this time forward Cotter's success was assured, and it is related that he retained to his death the liveliest sense of gratitude to his benefactor for his kindness, very honourably mentioning him in his will.

At the time Cotter commenced to exhibit himself there was living another Irish giant, the well-known O'Byrne, who had adopted the professional name of O'Brien. His success and reputation apparently appealing to Cotter, the latter appended the name of O'Brien to his own, so that he is henceforth known as Patrick Cotter O'Brien, and was so styled on his coffin plate. This assumption of the name of O'Brien has given rise to a certain amount of confusion in the popular mind between two different people. Whatever errors may have arisen on this score are set at rest by this communication. O'Byrne now adorns the Museum of the Royal College of Surgeons in London. Patrick Cotter "O'Brien" lies in the now disused Roman Catholic Chapel in Trenchard Street, Bristol.

Professional Career.

After his entrance into the world as a professional giant at Bristol we next hear of Cotter at Northampton, which he seems to have visited about the year 1785,

and his visit is described in 1826 by a Northampton barber in the following words:—

"It is now nearly forty years since this prodigy of nature first made his appearance in the town of Northampton. Like other great men he occupied his travelling carriage, with this exception, that Mr. O'Brien's vehicle was certainly of a more lofty description. He then appeared to be in his seventeenth year. His features were regularly formed, his countenance remarkably healthful, and his standing position erect and commanding. The mildness of his temper was conspicuous, and he possessed intelligence of a superior order to that usually discovered by the individuals of the trade to which he was apprenticed, viz., that of a bricklayer. His stature, 8 feet 7¾ inches, did not make him appear disproportionate. In every respect he was a well made man. At this time O'Brien was the guest of a Mr. Page of the George Inn. During his residence at this hospitable inn the honour devolved upon me to attend him in my official capacity of tonsor. After the exhibition of the day, and when the dwarfs of Northampton had retired to their cribs, this proud giant would take his morning walk, measuring with amazing strides the distance between the George Inn and Queen's Cross. Although I considered myself a clever pedestrian at that period of my life, I found myself under the necessity of changing my walk into a run in order to bear him company. Mr. O'Brien expressed himself as being greatly refreshed by these short excursions; they enabled him to enjoy refreshing sleep when he retired to his beds, for the common bed of humanity would have been useless, and therefore he had two joined together. Equal courage was combined with his strength, and he possessed in the fullest degree the warm temperament of an Irishman. (In another account it is stated that he had rather a large circle of friends and acquaintances.) An impertinent visitor excited his choler one day during his residence here by illiberal allusions to the land of his birth. The Philistine was sensible of the insult, seized the prig by the collar, held him out at arm's length, and gave him three or four mild agitations, something after the manner of Wallace the lion with the famous Billy of rat-killing memory. It taught the 'gemman' to respect his superior. Mr. O'Brien was visited by an immense number of persons, who were astonished at his magnitude and delighted by his manners." (This account refers to his first visit. The narrative goes on to describe Cotter on his second visit, and is exceedingly interesting on that account, as will be shown later.) "It is now upwards of thirty years since he last visited this place. His morning walk was then to some distance beyond King's Thorpe, but what a falling off was there in his pedestrianism! He seemed like a pillar shaken by the wind; his conversation, however, was still instructive and humorous.

"Mr. O'Brien enjoyed his early pipe, and the lamps of the town afforded an easy method of lighting it. When at the door of Mr. Dent in Bridge Street he withdrew the cap of the lamp, whiffed the tobacco into a flame, and stalked away as if no uncommon event had taken place. This gentleman was certainly the greatest friend that ever honoured me by his patronage . . ."

In 1785 Cotter visited London and from St. James's Street issued the following advertisement:—

"No. 30, St. James's Street.

"Mr. O'Brien has the honour to present his respects to the nobility and publick, whose patronage and protection he shall be proud to merit, that notwithstanding the innuendo which has been given out by the infant giants Mr. O'Brien has no art to add to his stupendous height, he is bold to assure them that he stands on his own feet without deception and wears his own hair. He acknowledges he is only 8 feet 3½ inches high, though Brian Boreau, the puissant ancient king of Ireland, was 9 feet high, which he hopes to attain before he is of age, being now between eighteen and nineteen years old. To prevent an improper mixture of company the price of admission from eleven in the forenoon is 2*s.*, from four till seven only 1*s.*"

This advertisement is certainly more florid than truthful. He could have no claim to descent from Brian Boreau, he was certainly older by six or seven years than the advertisement states, and we shall see later that his height was not 8 feet 3½ inches.

The challenge issued to the infant giants is supposed to refer to two brothers named Knipe, who were advertised at nearly 8 feet high, who issued an advertisement in the following high-flown terms:—

IRISH GIANTS.

"The most surprising gigantic twin brothers are just arrived in this metropolis, and to be seen at the Silk-dyer's, No. 2, Spring Gardens, Charing Cross. These wonderful Irish giants are but twenty-four years of age and measure very near 8 feet high. These extraordinary young men have had the honour to be seen by the gentlemen of the Faculty, Royal Society, and admirers of natural curiosity, who allowed them to surpass anything of the same kind ever offered to the public. Their address is singular and pleasing, their persons truly shaped, and proportionate to their height, and affords an agreeable surprise; they excel the famous Maximilian Muller, born in 1674, shown in London in 1733; and the late Swedish giant will scarce admit of a comparison. To enumerate every particular would be too tedious, let it suffice to say that they are beyond what is set forth in ancient or modern history. The ingenious and judicious who have honoured them with their company have bestowed on them the most lavish encomiums, and on their departure have expressed their approbation and satisfaction. In short the sight of them is more than the mind can conceive, the tongue express, or pencil delineate, and stands without parallel in this or any other country.

"Take them for all and all, we shall scarce look on their like again."

"Ladies and gentlemen are respectfully informed that their hours of admittance are from eleven in the morning to three in the afternoon, and from five to

eight in the evening, every day, Sundays excepted. Price of admission for ladies and gentlemen, 2*s.* 6*d.*; tradesmen, 1*s.*; servants in livery, 6*d.*"

It is evident that they had nothing to learn in the art of advertising in those days.

To return to Cotter. In July, 1785, he appeared at Sadlers Wells, and is stated to be 8 feet 4 inches in height, and undoubtedly the tallest man ever in this kingdom, with juvenile countenance, and quite pleasing appearance. He is said to be quite able to shake hands with the people in the upper boxes.

In the summer of 1785, Cotter removed from St. James's Street to the Strand, and an advertisement in that year says:—

"The Irish Giant, removed from No. 30, St. James's Street to No. 333, facing Somerset House, Strand. To be seen from eleven in the morning till seven in the evening, Mr. O'Brien of the Kingdom of Ireland, indisputably the tallest man in the kingdom, a lineal descendant of the old puissant King Brian Boreau, and who has in his person and appearance all the similitude of that great and grand potentate. It is remarkable of this family that however various the revolutions in point of fortune or alliance, the lineal descendants thereof have been favoured by Providence with that original size and stature which has been so peculiar to their family. The gentleman is between eighteen and nineteen years of age and measures 8 feet 3½ inches. He is of an athletic make, a great exactness of proportion, high beyond all conception, and is justly allowed to be the greatest wonder of the age. Admittance only 1*s.* each. The nobility and gentry will please to observe that a number of people go about to show themselves as tall men by various arts and deceptions, but Mr. O'Brien assures the public that the tallest man now exhibiting in this kingdom is not higher than his shoulder."

In 1804, Cotter again visited London and made his settlement at No. 11, Haymarket. The terms of the announcement vary but little from the one in 1785, but the height is stated as being "near nine feet."

Caulfield in Kirby's *Wonderful Museum*, 1804, states that when Cotter was at St. Bartholomew's fair about fifteen years previously he often walked about the streets at two or three in the morning, that he was accompanied by two men of ordinary height and seemed to support himself on their shoulders by his hands—as an ordinary man might do on the shoulders of a child of eight to ten years of age. He gives his height as 8 feet 7 inches, states that he is proportionately lusty, and that his hand measures from the commencement of the palm to the end of the middle finger 12 inches, that his face from the chin to the top of the forehead measures the same, that his thumb is about the size of a moderate man's wrist, and that his shoe is 17 inches long; that on the whole he is entitled to be called a well-proportioned man, his limbs not strikingly disproportionate, but that his figure wants that general symmetry which more commonly distinguishes a man of ordinary dimensions.

Another account describes Cotter as moving with difficulty and perhaps with pain.

By far the most interesting and at the same time the most trustworthy account of Cotter appeared in the *Gentleman's Magazine* of 1804 by W. Blair, a surgeon of the Lock Hospital, who saw Cotter on the 5th of May, 1804. He says, "I visited this Irishman at No. 11, Haymarket. He was of very extraordinary stature, but not well formed. As he would not suffer a minute examination of his person it is impossible to give any other than a very slight description of him. He declined the proposal of walking across the room, and I believe was afraid of discovering his extreme imbecility. He had the general aspect of a weak and unreflecting person, with an uncommonly low forehead, for as near as I could ascertain, the space above his eyebrows in a perpendicular line to the top of his head did not exceed 2 inches. He told me his age was thirty-eight and that most of his ancestors by his mother's side were very large persons. The disproportionate size of his hands struck me with surprise, and in this he seemed to make his principal boast. He refused to allow a cast to be made of his hand and said, "It has been done many years ago," but as I have seen that cast at Mr. Bacon's, I am convinced the size is much too small to represent his present state of growth. All his joints were large and perhaps rickety. His legs appeared swollen, misshapen and I thought dropsical. The feet were clumsy and concealed as much as possible by high shoes. His limbs were not very stout, especially his arms, and I judge that he had scarcely got the use of them, for in order to lift up his hand he seemed obliged to swing the whole arm as if he had no power of raising it by the action of the deltoid muscle. He certainly had a greater redundancy of bone than of muscle, and gave me the impression of a huge overgrown, sickly boy, his voice being rather feeble as well as his bodily energies, and his age appearing under what he affirmed. Indeed he gave a different account of himself to different visitors. The state of his pulse agreed with the general appearance of his person, viz., feeble, languid, and slow in its motions. With regard to his actual height I felt anxious to detect the fallacy he held out of being almost 9 feet. Upon extending my arms the utmost I reached his eyebrow with my little finger. Allowing his height to have been $2\frac{1}{4}$ inches above this it could not have been more in the whole than 7 feet 10 inches; so I am persuaded the common opinion founded on the giant's own tale is greatly exaggerated."

Patrick Cotter died on the 8th September, 1806, at Mardyke in the Hotwells, Bristol, of "disease of the lungs combined with an affection of the liver," and in his last moments was attended by Mr. Plowden. His age was stated as being forty-six.

At his death he was in affluent circumstances. His funeral took place on September 13th. According to the *Bristol Mirror* of that date the leaden coffin in which he was enclosed measured 9 feet 2 inches in length and the wooden case 4 inches more. Its width was 3 feet, his own stature having been 8 feet 1 inch, beyond all question the tallest man of the age.

It is estimated that at least 2,000 people attended his funeral, and no hearse could be found big enough to hold him, so that the projecting coffin had to be covered with black cloth. He was buried near the stairs in the Romish Chapel in

Trenchard Street; the grave was cut 12 feet deep in the rock, and such precautions taken as would render abortive either force or stratagem. We could have wished that he had voluntarily submitted his body to the investigation of some able anatomist, and that so unrivalled a specimen of gigantic stature had afterwards been deposited either in the Bristol Infirmary or the British Museum for the promotion of science, but it is not for one man to judge the feelings of another. Therefore *Requiescat in pace.*

In the same Journal there appeared in October the following advertisement:—

THE IRISH GIANT.

J. WILDS

"Respectfully informs the friends in this city of the late Patrick O'Brien, Esq., and the public generally, that being in possession of a most capital likeness in wax and the principal part of his wardrobe, he is enabled to gratify them with the view of a perfect wax model of his person, which will be exhibited on Monday the 3rd in a commodious apartment at Mr. Knight's stocking manufactory, Corn Street, near the Council House, from 10 to 2 o'clock, previous to its removal to Bath and London.

"Mr. O'Brien has been seen by so many persons previous to his retirement into private life, who will find this exhibition particularly interesting, that little need be said here to convince those who may not have had that pleasure that they are now offered an opportunity of contemplating a faithful copy of one of the most wonderful phenomena of nature."

As to the subsequent history of this wax model I know nothing.

RELICS OF COTTER.

At the Bristol Royal Infirmary there are preserved in the Museum:—

1. A cast of his hand evidently taken shortly before death.
2. A silk stocking.
3. A shoe.

At the Bristol Museum there are preserved:—

1. A cast of the hand by a pupil of Mr. Bacon (the one alluded to by W. Blair in the *Gentleman's Magazine*).
2. A silk stocking.
3. A shoe with last.
4. A lock of hair.
5. A pair of spectacles with case.
6. A walking stick.
7. A chair.
8. A portrait with legend.

His watch was bought at a sale of his effects for seventy guineas; it weighed one pound, but I do not know if it be in existence now.

From what has been said it is evident we are in possession of a very complete account of Cotter during life; now let us see what can be gleaned from an examination of his remains made almost exactly 100 years after his death, an examination which I was able to make whilst alterations were being made to the chapel in which he was interred. (March 3rd, 1906.)

I was called in too late to see the remains undisturbed in the coffin, which I should very much have liked to have done, but I was able to make careful measurements of all the more important bones, and to obtain several photographs.

The body had evidently been enclosed in three coffins, an outer of wood, a middle of lead and an inner of wood. The coffin plate was well preserved, and bore the following inscription:—

PATRICK COTTER O'BRIEN
of
Kinsale, Ireland,
whose stature was 8 feet 4 inches.
Died September 8th, 1806.
Aged 46 years.

This inscription is especially interesting as showing how little figures can be trusted, as all accounts of the coffin plate give the stature as 8 feet 1 inch.

The lead coffin was much distorted by the attempts to open it by the workmen, and at the top may have measured 9 feet 2 inches, as stated in many accounts, but a manuscript note on the portrait at the Bristol Museum gives the maker's name, and says the length is 9 feet 5 inches. Whatever the exact length may have been, it certainly looked enormous, more like a rowing boat than a coffin.

In the coffin were the bones, the remains of clothing and a woollen pillow in very fair condition. The hair was also well preserved. At the bottom of the coffin was a semiliquid mass about one inch in depth, of a reddish colour, in which I found the bones of the hand embedded; for the most part the skeleton was in very good condition, the bones of the hand were perfect, those of the foot were much decayed. The metatarsals, however, were in good condition as were all the long bones of the body.

The articular surfaces of the longer long bones were much diseased by arthritis, the neck of the right femur showed an impacted intra-capsular fracture, and the head was almost anchylosed to the acetabulum. Large osteophytes abounded near the articular surfaces of many of the long bones, confirming the opinion given by W. Blair, and previously quoted. In fact so much were these bones diseased that walking must have been a matter of considerable difficulty. The skull was in good condition and was specially remarkable for the enormous development of the face. The supra-temporal crest was markedly festooned at the coronal suture, and although I was not allowed to open it, it was quite easy to feel from the foramen magnum that the pituitary fossa of the skull was enormously enlarged.

MEASUREMENTS OF THE BONES.

The Skull.

Length, Glabello-inial			223mm.
Width			170
Ophryal			108
Stephanic			109
Zygomatic			159
Asterial			145
Height, Basio-bregmatic			134
Circumference			635
The Orbit:—			
Width	R. 51	...	L. 50
Height ...	R. 41	...	L. 46
Pyriform aperture:—			
Height			46
Greatest height			52
Height from nasion to subnasal point			71
Greatest height			74
Facial length:—			
Nasion to alveolar point			101
Nasion to bottom of symphysis ...			170
Mandible:—			
Angle to centre of bottom of symphysis			116
Condyle			167
Depth of symphysis			47

The lower jaw was remarkable for the great depth and forward projection of the symphysial region.

Vertebral Column.

All the vertebræ with the exception of the sacral were in fair condition and the lumbar column measured in height when articulated 170mm. The 3rd lumbar vertebra measured 76mm. in width.

The sacrum measured 140mm. in width at the base.

The limb bones.

Upper limb:—			
Scapula.			
Width from tip of acromion to vertebral border ...	... R. 210	...	L. 210
Length			L. 260

Glenoid cavity height	R. 53 ...	L. 50mm.
Suprascapular notch depth ...	R. 20 ...	L. 16

Coracoids relatively very small.

Clavicles:—

Length		L. 220

The curves were well marked, the groove for the sub-clavius deep, and the rhomboid impression well developed.

Humeri.

The head in both markedly arthritic, tuberosities small and the deltoid impression well marked. Bicipital groove well marked in both.

Length	R. 477 ...	L. 465mm.
Width:—		
Upper end ...	R. 70 ...	L. 67
Lower end ...	R. 90 ...	L. 90
Circumference:—		
Centre of shaft ...	R. 110 ...	L. 110

Coronoid fossa much larger in right than left.

Radii.

Length	R. 370 ...	L. 374
Circumference ...	R. 65 ...	L. 65

Ulnæ.

Length	R. 410 ...	L. 400
Circumference ...	R. 80 ...	L. 72

The Hand.

Left hand in perfect condition.

Semilunar, depth	25
Magnum	40
3rd Metac.	100
1st Phal.	70
2nd „	45
3rd „	25
	305

The cast of the hand at the Infirmary measured 310mm. from the wrist to the tip of the third digit. That by Mr. Bacon alluded to by W. Blair measured 275mm.

Lower Limb.

OSSA INNOMINATA.

These were much decayed and very extensively diseased at the acetabula, the right acetabulum being practically anchylosed to the head of the corresponding femur.

Height		L. 313mm.
Length between ant. and post. sup. iliac spines	R. 210 ...	L. 200
Acetabulum :—		
Width	R. 70 ...	L. 76
Depth	R. 30 ...	L. 67

Femora.

The neck of the right femur showed an impacted fracture, both femora were markedly pilastered. The internal condyles projected very much downwards as in knock-knee.

The head and condyles arthritic.

Oblique length	R. 658 ...	L. 650mm.

Tibiæ.

Length	R. 595 ...	L. 585
Circumference :—		
Head	R. 150 ...	L. 130
Middle of shaft :—		
Lower third	R. 145 ...	L. 150

Fibulæ.

Length	R. 540 ...	L. 550
Circumference at junction of middle and lower thirds of shaft	R. 80 ...	L. 85

Foot.

Bones much decayed.

Astragalus	R. 84
1st Metatarsal	R. 90
1st Phalanx	R. 40
2nd „	R. 30

Note to tibiæ.—Both were markedly concave forward in the upper half of the shaft.

The foot was relatively short as compared with the hand, in fact the cast of

the hand measured 12 inches in length, whilst the shoe (sole) measured 15 inches not 17 as stated by Caulfield.

Having now the facts before us as told by the skeleton we are in a position to form some opinion as to the real height of Patrick Cotter. Apparently it is the universal experience of those who have interested themselves in the subject, that the advertised heights cannot be trusted. Prof. Cunningham remarks, "with regard to the stature of giants in general the statements made in earlier records are altogether unreliable. No height, no matter how great or how ridiculous, was considered impossible, and even at the present time the utmost caution requires to be exercised before accepting as accurate the measurements of men who present unusually great stature." Advertised heights of giants on exhibition are always exaggerated and, according to Dana, it is always a safe rule to deduct five or six inches from all of these. A good example of the unreliability of statements regarding height was in the case of Winkelmeyer, whose height was advertised as 8 feet 6½ inches. Virchow, however, had the opportunity of measuring Winkelmeyer, and found that he was only 7 feet 5⅝ inches. Magrath too, who was carefully studied by Professor Cunningham, was stated to have been 8 feet 6 inches, 8 feet 5 inches, 7 feet 9 inches, whilst Dr. Bianchi, who carefully measured him during life, found that he was 7 feet 5 inches.

The ordinary evidence concerning Cotter is sufficiently conflicting, thus :—

In 1804	... ...	9 ft. nearly.	(Newspaper puff.)
1786	... ...	8 „ 7¾ in.	(Northampton barber.)
1804	... ...	8 „ 7 „	(Caulfield.)
1785	... ...	8 „ 4 „	(Cotter's advertisement.)
1785	... ...	8 „ 3½ „	(„ „)
1806	... ...	8 „ 4 „	(Coffin plate.)

In all contemporary accounts of the funeral the coffin plate is stated to have given 8 feet 1 inches, and the memorial tablet in the chapel states the height as 8 feet 3½ inches. We may well say with Pilate, "What is truth ?"

Then too we are led to believe that Cotter was a man of athletic build and of good proportions by many accounts. It is obvious that whatever he may have been in his youth he cannot lay claim to have been of an athletic build in his later years, but must have suffered a good deal, and all movements must have been accomplished by him with great difficulty. With regard to his real height, we are certainly confronted with difficulties. As Professor Karl Pearson justly says, the data upon which we can found calculations are so scanty that no definite rule can be formulated.

Then, again, in Cotter's case the tibiæ were so enormously long that any calculation made in the ordinary way from the femur would throw one hopelessly out.

Not being a mathematician myself I wrote to Professor Karl Pearson to give me an idea as to the height of Cotter from figures supplied, and this is what he says :—

"Enclosed are the estimates formed on the curves given in my memoir. I

have not calculated stature from fibula and ulna, as these bones are so rarely preserved in prehistoric material which I had chiefly in view.

"You will see that the left bones, although individually differing a good deal from the right, give the same mean value, 7 feet 9 inches.

"The tibia is relatively exaggerated; I believe that measured without boots the giant is not likely to have exceeded 7 feet 10 inches or so at his best. But with his boots on for advertisement purposes, I have no doubt he was called 8 feet. The best authenticated measurements on living giants always show a considerable margin on the reputed height. Still, allowing for all this, your 236 cm. is only equalled by the Paris giant, and his femur and tibia were less than those of the Bristol case. The Paris giant, however, as given by Humphry is, I believe, only an estimate from the mounted skeleton, and I believe it to be certainly exaggerated. I think you might safely say not less than 7 feet 9 inches and possibly 7 feet 10 inches at his best."

Professor Pearson adds that Flower's method would make Cotter's height as calculated from the femur as 7 feet 10 inches and as judged from the tibia as 8 feet 3 inches. But he expresses the opinion that Flower's method greatly exaggerates for statures over 7 feet 6 inches.

The following is the table of estimates by Pearson:—

From	R. Femur	...	...	S. 230·4	cm. =	7	feet	6·71 inches.
	R. Tibia ...	...	...	S. 244·0	„	8	„	0·06 „
	R. Humerus	...	...	S. 235·0	„	7	„	8·52 „
	R. Radius	...	...	S. 236·3	„	7	„	9·03 „
From	L. Femur	...	...	S. 230·4	„	7	„	6·71 „
	L. Tibia ...	...	...	S. 242·2	„	7	„	11·36 „
	L. Humerus	...	...	S. 233·5	„	7	„	7·93 „
	L. Radius	...	...	S. 239·0	„	7	„	10·10 „
Average of four estimates from—								
	R. bones ...	...	...	S. 236·42	„	7	„	9·08 „
	L. „ ...	...	...	S. 236·28	„	7	„	9·03 „
Average of eight estimates from—								
	R. and L. bones ...		...	S. 236·35	„	7	„	9·06 „

Dr. Beddoe writes that he calculates the height from Manouvrier's tables at 7 feet 10·85 inches. By his own method, calculating from the femur alone, the height is only 7 feet 5·6 inches, but he says that the distal bones are often longer in giants proportionately than the proximal, as in Cotter's case, consequently he prefers in such a case Manouvrier's yield.

The results of these calculations are exceedingly interesting, because they confirm in a quite remarkable manner the observation of W. Blair to the effect that he could not have been more than 7 feet 10 inches in height, allowing 2¼ inches for

the height of his forehead. (As a matter of fact, the actual height of the cranium above a horizontal line drawn through the glabella was 2¼ inches.) W. Blair then was exceedingly accurate in his estimate of the forehead and it may be taken that his estimate of the length of the body below the forehead was substantially accurate. Personally I am content to accept the height of Cotter as being about 7 feet 10 inches at the time when he was on show.

That being the case, Dana's observation with regard to the deduction of 5 or 6 inches from the advertised height of all giants is confirmed. Still it is possible that Cotter's claim that he was the tallest man of the age was correct, and so far as measured bones afford information as to height, Cotter seems to hold the record.

We may now ask ourselves what was the cause of Cotter's height? I think that there can be no doubt that he suffered from acromegaly.

a. Because he showed the characteristic enlargement of his facial region.

b. Because of the marked festooning of the supra-temporal crest (Dixon).

c. Because of the enormous pituitary fossa.

d. Because, if the evidence of the casts of the hand may be taken as valid, the hands became progressively enlarged.

My acknowledgments are due to many for help and information; much of the history has been taken from Wood's *Giants and Dwarfs*, from *Notes and Queries*, from the *Globe*, the *Bristol Mirror*, *Farley's Journal*, etc.

To Professor Pearson, Dr. Beddoe, Mr. Bolton of the Bristol Museum, and Mr. Bevan, who kindly took the photographs, my thanks are due, and to Mr. Telling of the Bristol Reference Library, who kindly looked up all the literature, I am exceedingly grateful.

TABLE OF GIANTS. (Karl Pearson.)

Name.	Locus.	Stature.	F.	T.	H.	R.
Joachim	Musée Broca	210·0	56·72	47·0	40·4	30·5
Berlin Giant I ...	Berlin Museum	223·0	64·0	53·0	45·5	30·5
Berlin Giant II ...	... ...	216·0	55·0	48·0	38·0	29·0
O'Byrne	R.C.S. Museum, Lond. ...	231·0	62·5	54·1	45·0	33·4
American Giant ...	... ...	213·0	58·5	47·8	41·3	30·0
Magrath	Trinity College, Dublin ...	226·0	62·4	50·6	43·3	33·8
"Krainer" ...	Josephinum, Vienna ...	203·3	53·4	43·5	39·5	27·5
"Grenadier" ...	... ...	208·7	55·5	45·6	40·5	29·0
Innsbruck Giant...	Innsbruck	222·6	61·5	52·0	44·6	34·3
St. Petersburg ...	Petersburg	219·5	56·5	50·0	46·0	33·5
"Wichsmacher"...	Vienna	202·3	52·4	44·9	39·4	27·8
Paris Giant ...	Musée Orfila	236·2	60·96	55·9	—	—
Patrick Cotter ...	Bristol	236·35	*65·4	59·5	47·6	37·2

* Average of two sides.



FIG. 1.—SKULL; NORMA FACIALIS (WITHOUT JAW).



FIG. 2.—SKULL; NORMA LATERALIS.



FIG. 3.—SKULL; NORMA FACIALIS (WITH JAW).

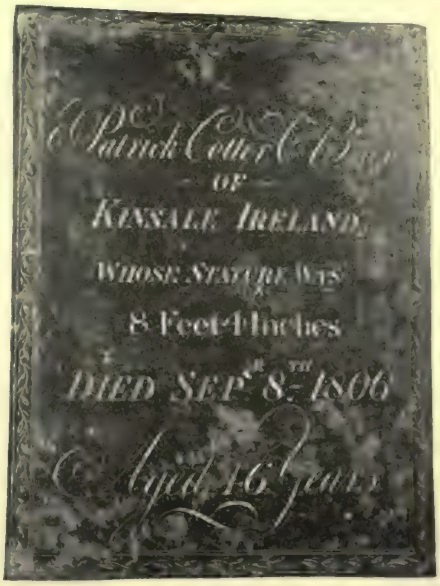


FIG. 4.—COTTER'S COFFIN PLATE.

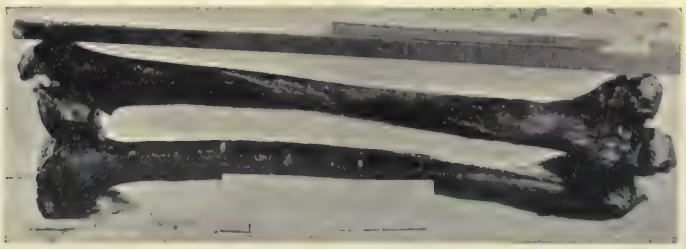


FIG. 5.—FEMORA.

PATRICK COTTER—THE BRISTOL GIANT.

SOME NOTES ON *NSIBIDI.*

By The Rev. J. K. Macgregor, B.D.

Nsibidi is the native name for a writing used a little here in the Calabar District of the Eastern province of Southern Nigeria, but much more largely up the Cross River and inland from it on both banks. So far as I have been able to ascertain, it is unknown in the Central and Western Provinces exceps amongst the Ibo people. If the Bini and the Yoruba have a writing, and I feel certain that they have, it seems to be different from *nsibidi.* This originated amongst the great Ibo tribe which is said to number 4,000,000 people and to cover about one-third of the Protectorate. They are a great artisan tribe, and their smiths are to be met in every village in this part of the country, and wherever a smith goes he carries with him the knowledge of *nsibidi.* The system of writing is really the property of a secret society, the *nsibidi* society, into which men are regularly initiated after undergoing a period of preparation. Some of the signs of the *nsibidi* are known to outsiders, but the vast majority are known only to the initiated. To the uninitiated they are mysterious and therefore magical, capable of doing harm because of the "medicine" that may have been used in making them. I have tried to find out from fellow-missionaries of other Societies in various parts of Kamerun whether it is known to the people there. They are unaware of its existence there, and as the tribes in Kamerun seem to have a Bantu connexion, it is quite probable that it does not exist. The Rev. Melvin Fraser, of the American Presbyterian Mission, assures me that it is quite unknown amongst the Bulu and Fang peoples amongst whom that Society works. Indeed the only other script that I have heard of is the famous one of King Nyoga.[1] That the existence of a script is unknown to Europeans must not, however, be taken as conclusive evidence that the script does not exist, for the natives have a strange but natural desire to hide as much as they can from the prying eyes of the European who has too often but learned what they held precious only to scoff at them.

For long it was not suspected that there was a native script in use in Calabar, as I shall for convenience call the whole of the part of the country in which *nsibidi* is known. The early missionaries maintained that they had no knowledge of writing. They knew the word *nsibidi*[2] and applied it correctly enough to the cuts

[1] In Mausfeld's *Urwald-Dokumente* (Berlin, October, 1908), which I have only just seen, is some reference to this writing. There are two plates of signs (Tafel IV, V, Verzierungen der Kalabassen), but the reference in the text is slight (*cf.* also Abbildung 29). Dr. Mausfeld found this writing amongst the Eksi people who live north-east of Calabar, both in British and German territory.

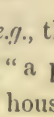
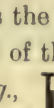
[2] Mr. Goldie in his great Dictionary of the Efik language derives *nsibidi* from an Efik verb "*sibi*," to cut. "*Sibi*," however, means to slice and not to make the cuts referred to.

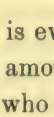
made on calabashes, native pianos, etc, unaware that many of these signs had significance. Again they were aware that there was an elaborate system of acted signs by which people held communication, but they had not discovered that this language of signs had been reduced to writing. The discovery of *nsibidi* was made by T. D. Maxwell, Esq., whilst acting as District Commissioner in Calabar in 1904. By his evident desire to understand native modes of thought and by his tact, he won to a large degree the goodwill of the people. Accordingly when he was asked by His Excellency the High Commissioner to superintend the arrangements for an exhibition of native goods, he was able to include in it twenty-four *nsbidi* signs that he had received from one of the chief women of the Henshaw family. These were published by command of the High Commissioner in the Government Civil List for the Protectorate in July, 1905. Mr. Maxwell has very kindly given me permission to use these signs.

Meanwhile in complete ignorance of Mr. Maxwell's find, I had stumbled by accident on the fact that *nsibidi* existed. In a class I was teaching, a pupil deeply resented the statement that the civilisation of the people in Nigeria was primitive because they had no writing. He declared that they had a writing called *nsibidi*. This happened in April, 1905. As I was at the beginning of a new term, I set myself to find out all I could about *nsibidi*. People smiled when I asked for information and declared that they knew nothing about it. The reason for this is that in Efik *nsibidi* is used almost only to express love, and this term covers such a multitude of most abominable sins that no self-respecting Efik person will confess that he knows anything about the writing of it. The few specimens I got were grossly misinterpreted to me so as to tone down their meaning. Still from them it was possible to see that here we have a genuine product of the native civilisation the origin of which is so old as to have become the subject of a *Märchen*. It does not show any trace of Egyptian influence. For one thing, by 4000 B.C. the Egyptian script had already begun to develop an alphabet, and had *nsibidi* been influenced by Egyptian hieroglyphics there would surely have been some traces of an alphabet in it. So far I have found none. I do not think that there has been any development towards an alphabet, nor, had it been left to itself, would there ever have been any such development.

The signs have been gathered by me from various sources, especially from two boys from Abiriba called Onuaha and Ize Ikpe, and from a woman who one day came to my house selling work with *nsibidi* on it, and when I began to tell her what it meant she told me what I could not make out and then offered to teach me more. Her mother, she said, had had a school for the teaching of this script. It was from the Abiriba boys that I obtained the story of the first *nsibidi* which I give below. In as many cases as possible I have checked the interpretation of signs by bringing them to several people, but this has only been the case with a very few. Where so few people will own to a knowledge of *nsibidi* to obtain and to check are equally difficult. Owing to this practical impossibility of verification I give the meanings with all due reserve. It is but fair to state that all the

interpretations given by Onuaha and Ize Ikpe that I have been able to check have been supported by the natives to whom they were submitted, and every one of those I send has been scrutinised by them. Even from the limited number of signs which I have collected several things are noticeable.

1. The same sign stands for different things, *e.g.*, the sign  may be "a man" who is an onlooker or a messenger, "a pillow," "a tree" that supports the roof of a house, or "the house" itself. Sometimes, as in the last of these cases, this multiplication of meaning is easily explained, *e.g.*,  is "a whip," "a man with a whip," and also "a runner in an Ekpe play," because they carried whips. It is of course used in this last sense only when the Ekpe sign is written with it or attached to the figure-group in which it occurs. 
2. The same thing is expressed by different signs. In this case there is always a subtle shade of meaning in the difference. This is most noteworthy in the case of signs representing men. Many separate acts or states of mind are thus represented.
3. There is no order of writing. A sign may be horizontal or vertical or oblique as suits the convenience of the writer. The consequence of this is that all the signs in a collection have to be interpreted before the meaning is plain.

How did this script originate? It is evidently a picture-writing of considerable age, for already there is a certain amount of conventionality about some of the signs, *e.g.*  which means a man who makes trouble between two people. The native tradition of its origin is that it comes from the Uguakima section of the Ibo tribe. The Uguakima dwell between Ikorana on the Cross River and Uwet on the Calabar River, and seem to be the people known amongst the Efik people as the Uyanga. By them it was taught to the people round about. The way in which the Uguakima say that they learned *nsibidi* is this. In the forests of their country live many large baboons called *idiok*. If a man is staying in the bush all night and makes a big fire to warm himself or to frighten away wild animals, the *idiok* will come down from the trees and sit round the fire just like men. When the *idiok* did this, all men were frightened and ran away, but the Uguakima were not frightened. Thus there sprang up a friendship between the *idiok* and the Uguakima. After a time the *idiok* began to write signs on the ground which the Uguakima did not understand. At last it was seen that when an *idiok* traced a sign on the ground and then acted in pantomime, the sign on the ground meant the act performed. These signs the Uguakima called *nsibidi* which is derived from an Ibo word *sibidi*, meaning to play, for they had learned these things through the playing of the *idiok*.[1] To the signs thus learned from the *idiok* many pictures of common

[1] "To play" in the native use has a much wider meaning than in English. It stands for all the shades of meaning from sport to drama. Because the dramas, as we may call the native dances, are religious, it has also the sense of to bewitch. Because the beat of the heart is regular as the beat of a drum, it is also applied to the beating of the heart.

objects have been added, *e.g.*, those for comb, calabash of money, etc. Besides *nsibidi*, the Uguakima also learned from the *idiok* much medicine, so that they are the wisest witchdoctors in the country.

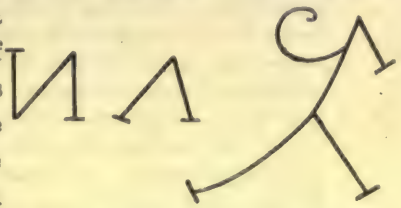
The use of *nsibidi* is that of ordinary writing. I have in my possession a copy of the record of a court case from a town on the Enion Creek taken down in it, and every detail, except the evidence, is most graphically described,—the parties in the case, the witnesses, the dilemma of the chief who tried it, his sending out messengers to call other chiefs to help him, the finding of the court and the joy of the successful litigants and of their friends are all told by the use of a few strokes. It is also employed for purposes of communication. I have not actually seen an *nsibidi* letter. One which came into my possession as such turned out on examination to be merely a number of signs with no intelligible connection, but from what I have seen of it I see no reason to doubt the very common statement that it is used for this purpose. A wide-spread use is to give public notice or private warning of anything,—to forbid people to go on a certain road, an *nsibidi* sign, far more powerful than any constable, is made on the ground: to warn a friend that he is to be seized, the sign of a rope is chalked where he cannot fail to see it, and he at once flees: to convey the wishes of a chief to all who may come to visit him, signs are set on the walls of his house. At first I thought there could be no old records of *nsibidi*. All the signs that I have seen have been made on the ground, or in chalk, on the walls of houses, or burned on calabashes, etc., as an ornament. Some time ago, however, the woman to whom I referred above as one of my informants told me that her grandmother had sewn many signs on cloth and these her mother taught in her school. This cloth she would not on any account let me see as she said it was too frail, but she made a copy of it for me on paper and gave me the copy with the interpretation. The signs, except in rare instances, are not connected with each other, and the whole was more of the nature of an aid to memory for the teacher than a record of anything. The age of this cloth must be at least sixty years and it is the oldest specimen of *nsibidi* of which I have heard.

As regards the nature of the writing, it is pictographic pure and simple. Is a man a stranger who has no place in a town, then he is represented as standing on only one foot. Does he hold up his hand in the air to make signs, then five lines representing his five fingers are drawn. Is money referred to, then a picture of native rods is drawn. Only once have I had a sign interpreted by an abstract term;  was said to mean "a bad habit," but the rarity of the abstract idea in native thought made me suspicious, and now I learn that it means a man who has a bad habit, any bad habit, which he practises.

So far I have discovered the signs for very few animals. The sign  for the *idiok* is the same as one of the signs for a man. The sign for the snake  aptly illustrates the native name for the snake, *uruk-iket*, *i.e.*, literally the bush-rope. I include in my lists the signs for the butterfly, the leopard-spider, the snail and the fish-hawk. It is more than

probable that there are signs for most of the common animals, though I have not yet come across them.

Already the effect of Europe is being felt on *nsibidi*, and it is urgent that as speedily as possible the collection of the signs should be completed. It came as a painful surprise to me one day when Onuaha brought me this sign and told me that a boy of his own name had given him it that day (I was in Umon at the time) and said that it was the *nsibidi* for Onuaha. The first two signs are corruptions of the English capital letters N and A whilst the third sign is distinctly reminiscent of more than one *nsibidi* character.[1]



Description of Figures 1–98.

Marriage and Home Life. (Figs. 1–2*a*.)

1 and 2. Married love (2, with pillow).
3. Married love with pillows for head and feet—a sign of wealth.
4. Married love with pillow.
5. Quarrel between husband and wife. This is indicated by the pillow being between them. (Mr. Maxwell.)
6. Violent quarrel between husband and wife. (Mr. Maxwell.)
7. One who causes a disturbance between husband and wife. (Mr. Maxwell.)
8. A woman with six children and her husband ; a pillow is between them.
9. Two wives with their children (*a*), of one man (*b*), with the roof-tree of the house in which they live (*c*). The tree is put for the whole house.
10. A house (*a*) in which are three women and a man. The dots have no meaning.
11. Two women with many children in the house with their husband.
12. Two women on each side of a house. One on each side has a child.
13. A woman with child. (General sign.)
14. The same. If a man writes this sign on the ground, it means that his own wife is with child.
15. Palaver, the general term, by no means confined to marriage palavers.
16. A woman who does not want her husband any more.
17. A woman who wishes to put away her husband.
17a. Mr. Maxwell gives this sign = embracing. I have not been able to get his interpretation corroborated.
18. A harlot.
19. Two women who live in the same house have palaver every time they meet. A third woman is entering by the door.
20. A man (*a*) who comes to a woman who has a husband and asks her to live with him.

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[1] Since writing the above I have had handed to me a paper with several new *nsibidi* signs and headed "*Nsipbri Obiaebe.*" *Nsipbri* is simply a form of *nsibidi*, but Obia="a practiser." The phrase thus means "the play of the practisers of Ebe"—Ebe is one of the names given to the people who live in the north of Uwet whom I have called Uguakima in the course of my paper.

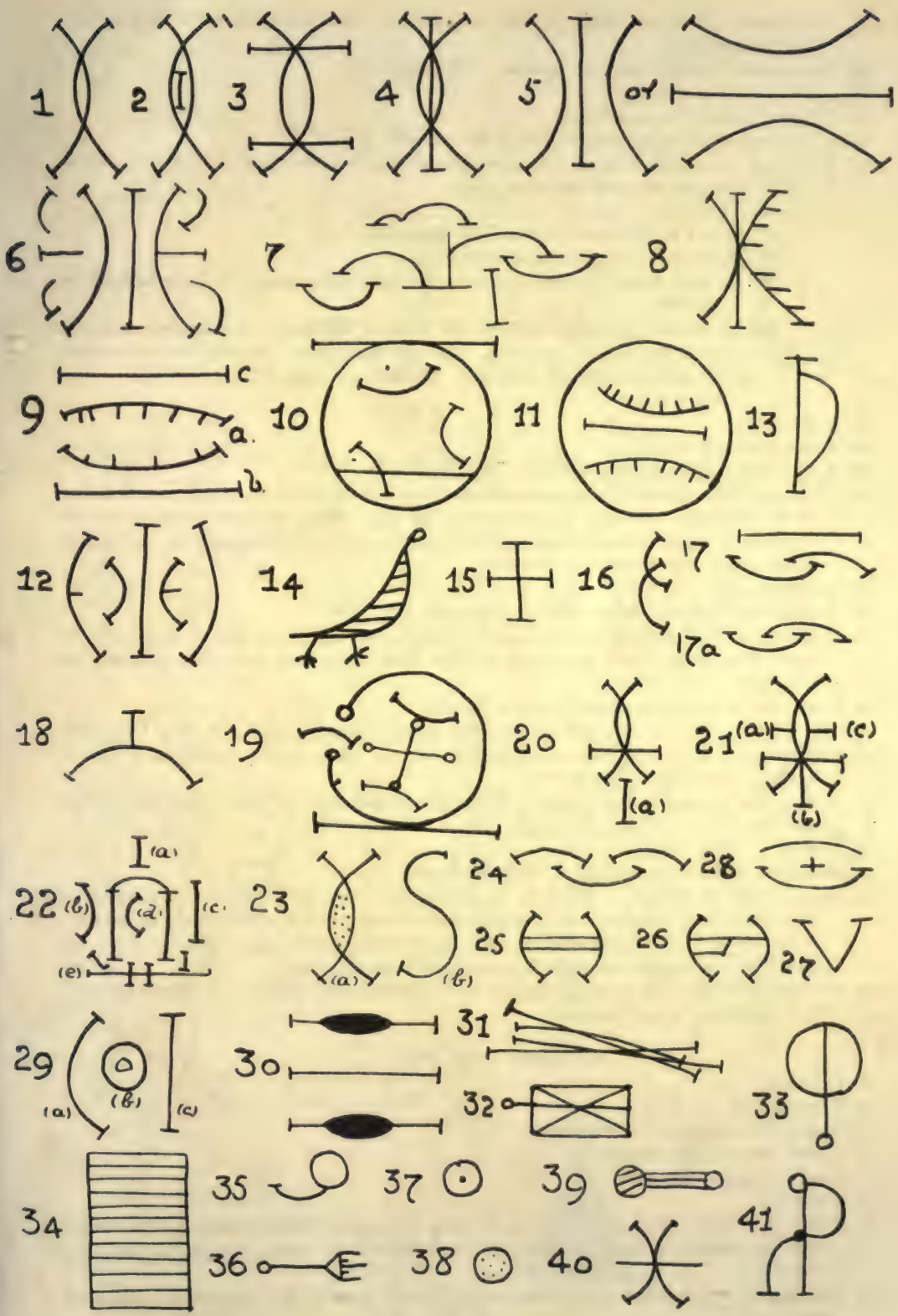
21. (*a*), (*b*), and (*c*) are three men who sought the same married woman, and quarrelled because of her. (I do not see anything in the written sign to indicate that they quarrelled. On the other hand, if the palaver sign ✠ were there, it would mean simply that trouble came of it, without indicating what that trouble was.)
22. (*a*) is a man who committed adultery with a woman (*b*), who now lives apart from her husband (*c*). According to native law, the guilty man has to pay compensation for what he has done to the woman's family and to (*b*) her husband. (*d*) is the money paid, the curved sign inside showing that it was paid on account of a woman. (*e*) are the parties to whom the money was paid.
23. A man and a woman were "friends." The man wished to leave her, but she would not agree. One day when she was at the farm he wrote this sign all over the house, and took his departure. (*a*) means that he curses her, saying that she has "craw-craw." (*b*) means that he has gone to another town.
24. Love without agreement. (Mr. Maxwell.)
25. Heart with true love. (Mr. Maxwell.)
26. Heart without true love. (Mr. Maxwell.)
27. Inconstant heart. (Mr. Maxwell.)
28. Two persons agree in love.
29. In war it is a common practice for the enemies of a town to hide near the place where the women bathe, and shoot them. It is a great disgrace for a man to lose his wife in this way, and men "curse" him by writing this sign on the ground, or by saying, "Where were you when you killed your wife?" (*a*) is a woman who goes to bathe in the river at a ford (*b*), while her husband (*c*) watches to see that no one shoots her.

Common Articles of the House. (Figs. 30–44.)

30. Juju hung over a door or on the road to a house to keep danger—especially evil spirits—from the house. Sacrifices of fowls and goats are offered to it.
31. Firewood.
32, 33. Looking glasses. (Also used for a man with a looking glass.) (Mr. Maxwell.)
34. A native mat, used as a bed.
35. A gourd for a drinking cup.
36. Native comb. (Mr. Maxwell.)
37. Toilet soap. (Mr. Maxwell.)
38. Basin and water. (Mr. Maxwell.)
39. Calabash with 400 *chittims* inside it. A *chittim* is a copper wire worth one-twentieth of a rod. Such calabashes have hinges of three strings. (Mr. Maxwell.)
40. Slaves.
41. Fire.
42. A house on fire. Two people are inside. A man outside has a rope to draw them out.
43. Disturbance. (Mr. Maxwell.)
44. A man who has many children in his house thinks that he has more children than anyone else in the town. He writes this sign as a challenge to other men. It means that he will tie with a rope (*a*) anyone who says he has more children than he. The double sign for palaver shows that he will make a big affair of it.

Public Life in Town. (Figs. 45–74.)

45. Sitting stick with men on it.
46. The same, with a messenger speaking to men. (Mr. Maxwell.)
47. A society with their fighting staff. (Mr. Maxwell.)
48. Trading. (? forked roads with a rod—native money—over them.)
49. A man with his wrists tied.
50. (*a*) is a man who is to be sold as a slave, and whose hands are tied in front. (*b*) is the person taking him to the slave market.


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(b)
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(a)
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FIGS. 1–41.

51. (*a*) = slaves; (*b*) = free born. To write this before a man means that you are free born and he is a slave.
52. Two persons fixed to a post by leg-irons. (Mr. Maxwell.)
53. A man locked in prison.
54. "Plenty" money, *i.e.*, native rods.
55. (*a*) is a man praising his country. (*b*) is the praise he gives.
56. (*a*) begged something from (*b*), who agreed to give it, but afterwards drew back his hand. (*c*) is a bystander who saw the whole affair.

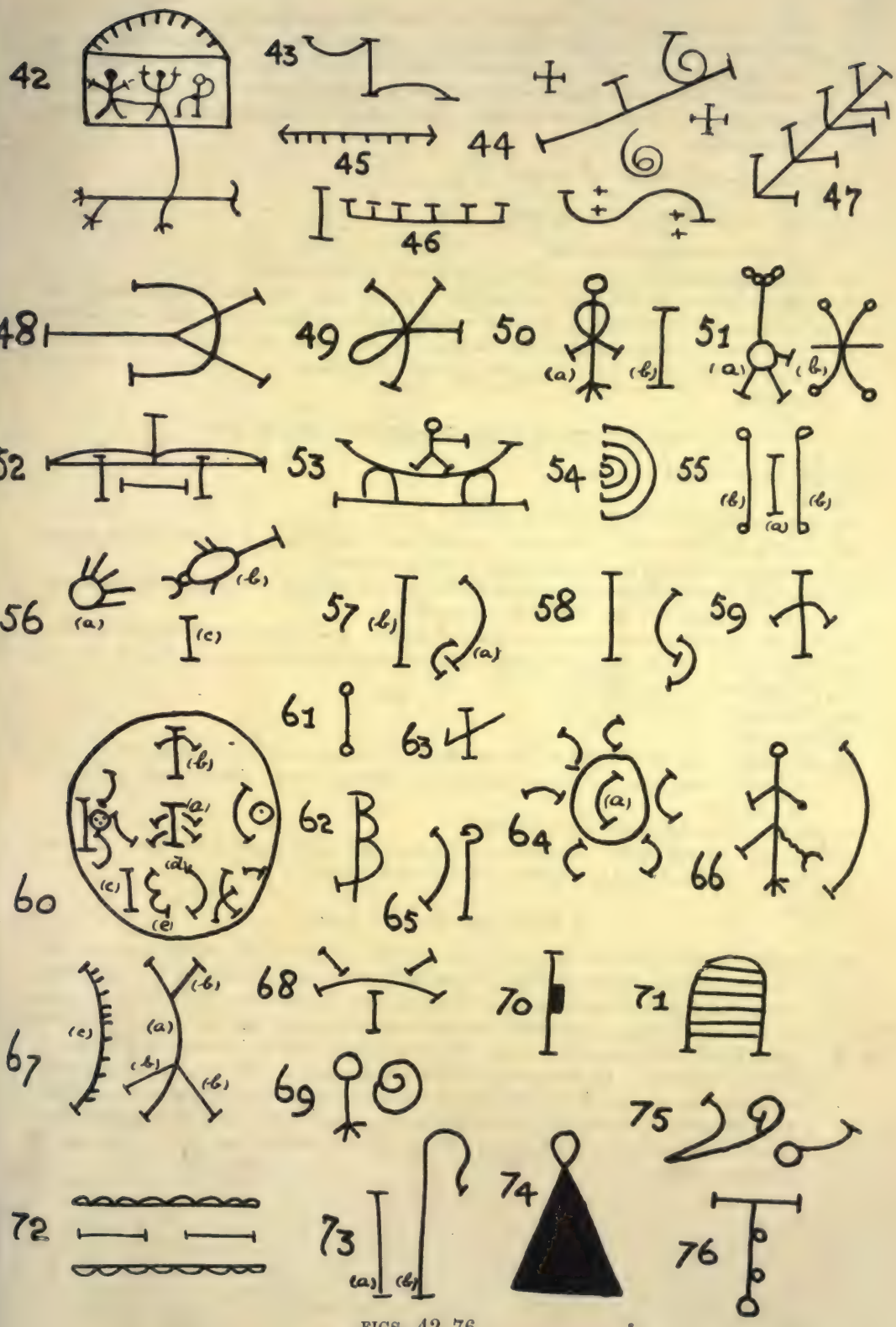
57–60 are parts of a story.

57. (*a*) is a beggar who borrows some money (*b*).
58. He receives something, and turns to go.
59. He goes along the road carrying the rod (native money = 3*d.*) which he has received.
60. He comes to the market. (*a*) is the noise of the people as they buy and sell. (*b*) is the hero of this tale. (*c*) is the hero again. He has come to a woman (*d*), and is bargaining with her. She will not agree to his prices, and "curses him a thief" (*e*).

61. A javelin.
62. A man holding a shield.
63. A man on the look out for a message. (Mr. Maxwell.)
64. (*a*) had all these people—"brothers and sisters"—who work for him and will not allow him to do anything. He lives happy till they all die. When they are dead, one of his companions comes to laugh at him and so (*a*) writes this sign on the ground. It means, "I am lonely and must not be mocked."
65. A solitary man.
66. A man who stands by himself and has no friends.
67. (*a*) is a man who is without companions, (*b*) are three men who curse him, (*c*) means that he shows them he had many slaves who are now dead. Had they been alive (*b*) would not have dared to curse him so.
68. A sick man who is being visited by three friends.
69. "If your friend is in trouble and you hear that they are coming with a rope to tie him, make this sign on the ground and even though you do not speak a word he will know how to escape." (Literal translation.)
70. A whip, also a man who has a whip. When placed with the *ekpe* sign = an *egbo* or *ekpe* runner.
71. A door.
72. Main road with two persons on it. (Mr. Maxwell.)
73. (*a*) is a chief of Abariba. When he is installed in office, he is given a stick of office, (*b*) which is tied with iron. It is strange that in cases where a man—always an old man—and his stick are represented, the stick is uniformly much bigger than the man. In actual life it is usually long enough to come up to his shoulder.
74. A "tiger-leather" is the usual native name for a leopard's skin. When a man possesses one, he is considered a real big man!

Sicknesses. (Figs. 75–86.)

75. Dysentery.
76. Elephantiasis.
77. Wound with a plaster of herbs on it.
78. A man who has been drowned.
79. Another sign for the same.
80. Small-pox.
81. A man (*a*) with a wound or ulcer (*b*) on his leg. (*c*) comes to dress it, but when he sees its size and nature he hides his face. (*d*) is a calabash of water brought to wash the wound.
82. Leprosy. It represents a stick held by two hands. Among the Uguakima a man who


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(c)
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(a)
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(d)
(e)
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(c)
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(a)
(b)
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FIGS. 42–76.

never takes off his clothes and never goes naked will be stopped by the people who hold their sticks so and move their hands up and down the stick—now the right hand above, now the left hand. This action means, "Are you a leper that you never take off your clothes?" Lepers and those ill with small-pox are not allowed to stay in the towns.

83. Menstruation. A woman is not allowed to cook food for her husband till one week after menstruation.

84. A poisonous snake killed  snake.

 = knife with which it was killed.

 is the usual sign for poison.

85. Drunkenness (really a drunk man being taken home by his friends).

86. Ayikha is the native name for this disease. I do not know its technical equivalent. The full meaning of the sign is—(*a*) is a woman who has ayikha, (*b*) is a man who used to visit her. A friend, learning the condition of the woman, will warn the man not to visit her by writing this sign on the ground. The disease is contagious, but it is not syphilis.

SOME ADDITIONAL SIGNS—UNCLASSIFIED. (Figs. 87-98.)

87. (*a*)—a man hanged by a rope (*b*).

88. Snake.

89. Water-snake.

90. A snake said to be very poisonous. A medicine is made from it by the Akuna-Akuna people, to enable a man to steal without being detected.

91. (*a*) a man sees this large snake and touches it with a stick which he takes to Abia-idiöñ, who tells whether it is a sign of good or bad fortune.

92. Poisoned bow and arrow used in hunting elephants. The Inokuns used them in fighting against the troops sent against them by the British Government at the time of the Aro expedition.

93. The butterfly.

94. Four snails.

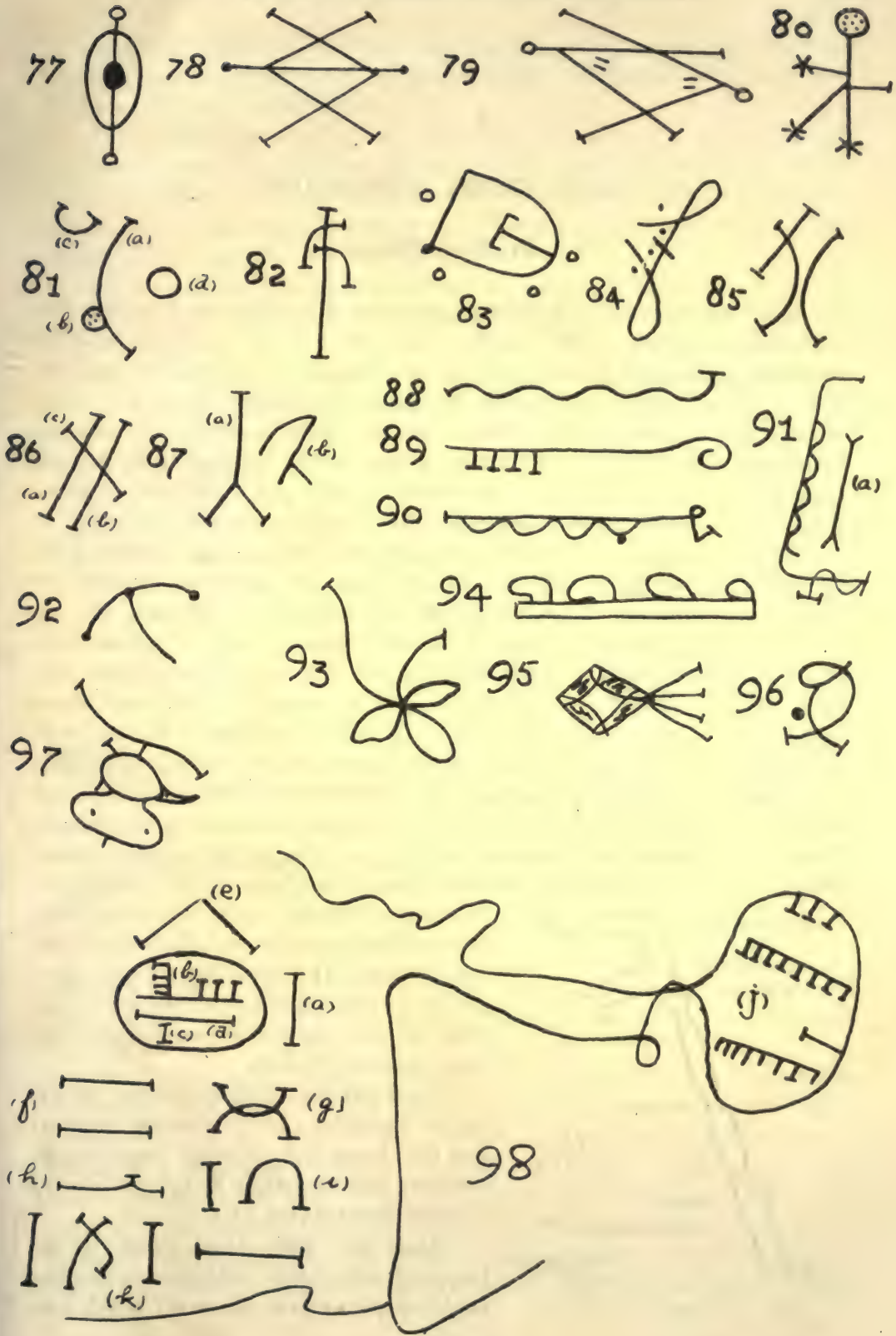
95. Bird called itnew (fish hawk) and its feathers. A feather of itnew, powder, wad of a gun used to be sent from one tribe to another as a challenge to war. To accept the gift was to declare war.

96. Spider called *mkpanutue* (? Spider's web.)

97. *Utue ekpe*—leopard spider. A yellow and black striped spider found in the bush. It is said to be poisonous, but I have often handled it with impunity.

A NSIBIDI RECORD FROM ENION.

98. The record is of an Ikpe or judgment case. (*a*) The court was held under a tree as is the custom, (*b*) the parties in the case, (*c*) the chief who judged it, (*d*) his staff (these are enclosed in a circle), (*e*) is a man whispering into the ear of another just outside the circle of those concerned, (*f*) denotes all the members of the party who won the case. Two of them (*g*) are embracing, (*h*) is a man who holds a cloth between his finger and thumbs as a sign of contempt. He does not care for the words spoken. The lines round and twisting mean that the case was a difficult one which the people of the town could not judge for themselves. So they sent to the surrounding towns to call the wise men from them and the case was tried by them (*j*) and decided; (*k*) denotes that the case was one of adultery or No. 20.


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(b)
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97
(e)
(a)
(b)
(c)
(d)
(f)
(g)
(h)
(i)
(k)
(j)
98

FIGS. 77–98.

SOME ULSTER SOUTERRAINS.

By Mary Hobson.

For many years past I have lost few opportunities of visiting and measuring any souterrains of which I have heard. The sum total is not so great as at first might be expected, owing to our very wet climate. So many are situated far from a railway station, occasionally in almost inaccessible places, and being underground are subject to flooding, some of which never dry up and are consequently impossible to enter, others I have waited for months to see, and again great numbers are closed, the entrances lost, and even their existence forgotten. I have been able to tell people that one existed on their own land.

I have carefully measured all that I shall have occasion to mention and made sketches and taken photographs of some entrances. The measured drawings are by Florence F. Hobson. I need hardly say that souterrain is the name that we give to artificial underground caves in Ireland. They are built of unhewn field stones and take the form of narrow chambers and long passages roofed over with large flag stones and are absolutely devoid of mortar. I shall deal almost exclusively with those in the two counties of Antrim and Down. Farther south a circular type of structure occurs. I have said that they are underground. That is so except in an earthen fort and in rare cases where the earth has been removed. One is always struck by the smallness of the entrances (which are most cunningly concealed) and also of the doorways between one chamber and another; almost always one has to lie down flat and creep through, and some I have been in are too small to admit the width of shoulder of an average sized man, a point I shall draw attention to later. The structures are quite dark and of an even temperature all the year round. They are near the surface and I have never come across any bad air.

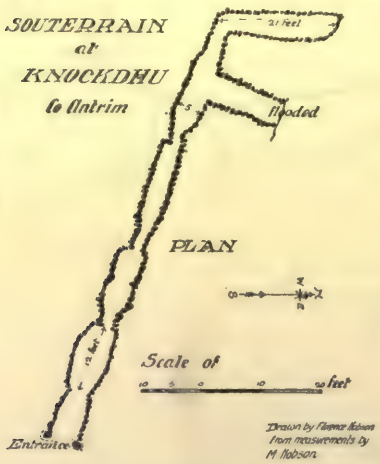


FIG. I.

I will take the Antrim caves first. At the foot of Knockdhu, a hill overlooking the coast-road from Larne, is a souterrain containing six chambers with a length of 87 feet exclusive of a flooded chamber (Fig. 1).

Again and again I am struck by the frequency with which prehistoric monuments are found quite near to the caves; in this case

we have a giant's grave 32 feet long, a standing stone 17 feet 9 inches high, a second giant's grave, a kistvaen, etc. A small but perfect cave occurs at Crebilly near Ballymena; it contains two chambers.

At Shankbridge is a fine fort known as Fort Hill, and in it a cave. The first chamber is 10 feet long and 5 feet high, second chamber 15 feet long, and near the far end on the right is one of the low doorways leading to another chamber which is flooded; it is probable that this structure runs right through the fort, as on the opposite side is what looks like another entrance.

On the road to Crumlin from Belfast is Lisnataylor Fort. The cave in it

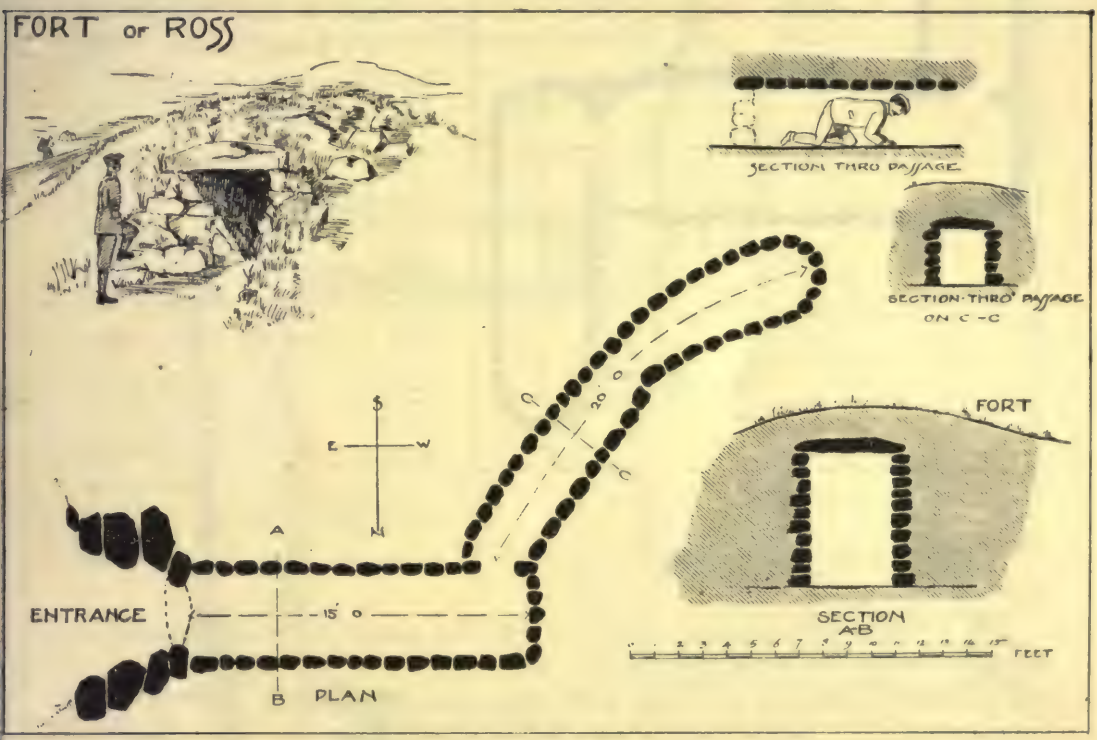


FIG. 2.

contains only a single chamber 10 feet long, 4 feet to 4 feet 6 inches wide, height 3 to 4 feet; the covering stone at entrance is 2 feet 6 inches on the under-side, height of entrance is 2 feet.

The district round Connor is honeycombed with souterrains. Two in the churchyard were measured years ago and reported in an Ulster Archæological Journal. In one day I visited and measured no less than four, Tanneybrack, Ballycown, Fort of Ross (Fig. 2) and Shankbridge (Fig. 3). This cave is a very perfect one and quite dry. It has almost the smallest opening I have been through. The first chamber is 15 feet long, 3 feet 9 inches high, second chamber 19 feet 6 inches long and 4 feet 6 inches high, the last doorway is 17 by 17 inches, and proved a perfect fit; last chamber 16 feet 6 inches long and about 3 feet high.

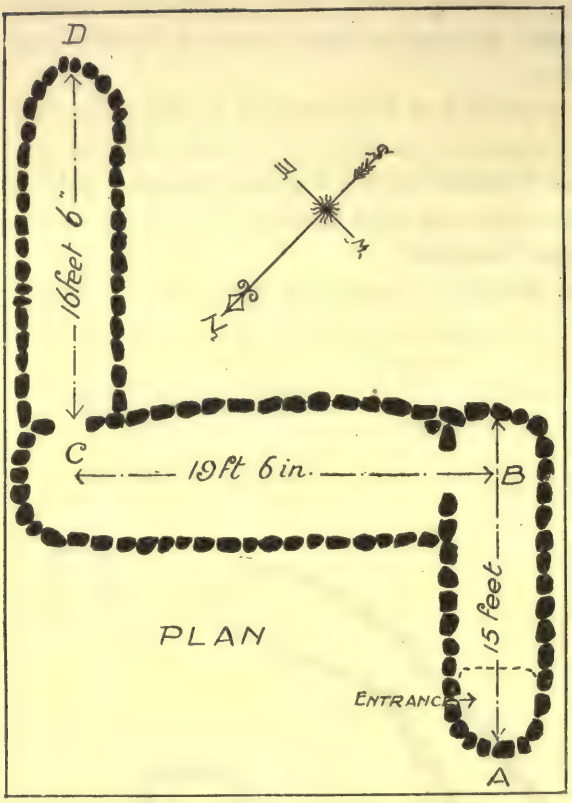


FIG. 3.

The one case of two distinct stories, one partly over the other, is at Bog Head, Muckamore. This was accidentally discovered, and we have not yet found the original entrance. The dimensions are: a sort of vestibule 5 feet 6 inches long; a low doorway 2 feet 7 inches by 1 foot 7 inches, chamber 7 feet by 4 feet and 5 feet high. A hole in the floor 2 feet 6 inches by 2 feet 2 inches admits to the lower chamber 19 feet 2 inches long, 3 feet 3 inches to 5 feet 2 inches wide. Again another doorway, but now choked up. Both these floors have been dug over by the Rev. W. A. Adams of Antrim, and have yielded pottery of a very primitive description, most likely domestic.

In co. Antrim there are certain diversities in structure which are not come across in Down.

At Donegore the entrance is large and looks like a natural cave, but the interior has been scooped out of the rock (basaltic ash), and has another chamber on higher level: the entrance cave is 5 feet 4 inches high, 8 feet 3 inches long, the upward tunnel 20 feet long, entrance 31 inches wide (Fig. 4).

In the same district, at Ballymartin, is another of exactly the same type, cut out of the face of a cliff overhanging the river, but this has a roof of large stones placed across in the usual way. This souterrain has four chambers so rising in height that at the end one is almost in a standing position. The lengths are: first chamber 8 feet, second chamber 17 feet, third 7 feet 6 inches, the doorway 5 feet, and the last chamber is 7 feet, total length 44 feet 6 inches (Fig. 5).

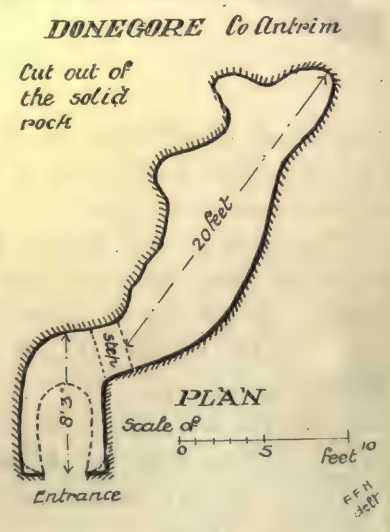


FIG. 4.

Others of smaller proportions are, one at Liminary discovered in June, 1904, containing three perfect chambers, one 15 feet long and 5 feet high.

One near the "Altar in the Woods," Glendun, with one chamber only. One near Tornamona Cashel, Cushlake, on the face of the cliffs overhanging the sea, a quite perilous place to reach.

At Tavenahoney in Glenan I found the only vent or shaft I have seen, though I know of another. I am not sure that it was intended for ventilation, but rather incline

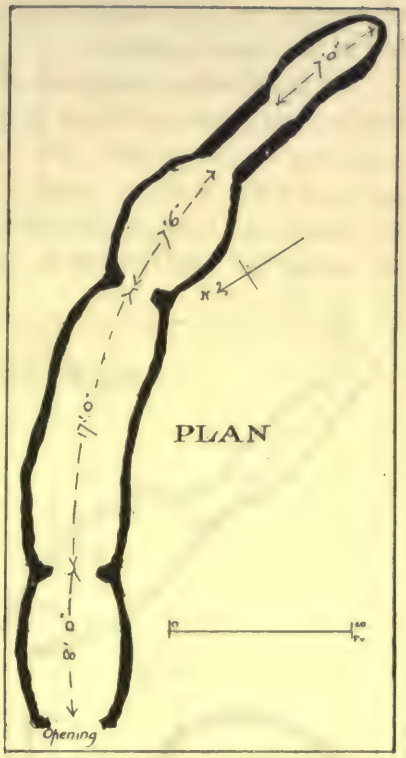


FIG. 5.

to the idea that it is a speaking tube to give warning to those inside; a boy spoke to me through it. It was closed on the outside by a rough stone like thousands scattered over the hillside. There are two short chambers.

At Bushmills and Giant's Causeway I found two caves, one built of rocks *in situ*, and filled between artificially, with the only guard-chamber I know of (three rocks forming a triangle); just within the entrance some tunnelling has been cleverly done in the rock; at the Giant's Causeway near the P.O. tunnelling has also been done (Fig. 6).

The structures in co. Down while not showing the diversities

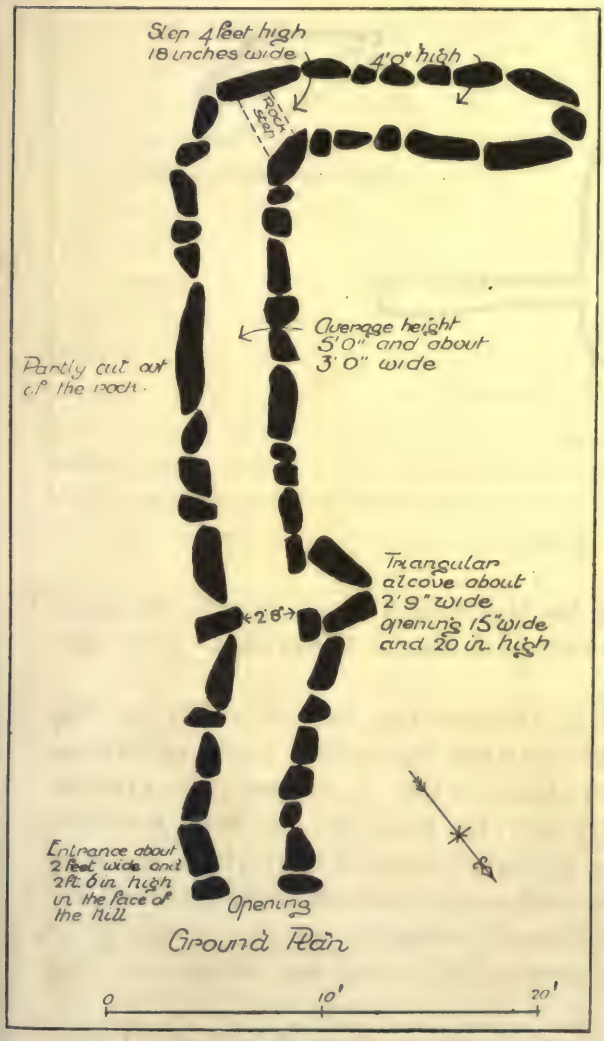


FIG. 6.

of Antrim, *i.e.*, two stories, tunnelling, etc., are much longer. We will take a few of the more important.

At Ballygrainey (the town of the sunny palace) near Craigavad Station and within a few miles of Belfast is a very fine one, 70 feet 6 inches in length, and containing four chambers; the first being 16 feet 6 inches long, 5 feet 3 inches wide and 5 feet 3 inches high; to the right of entrance a passage 19 feet long, 15 inches and upwards in width, and the height of which varies from 2 feet 20 inches, the low doorway to chamber on the left (from entrance chamber) is

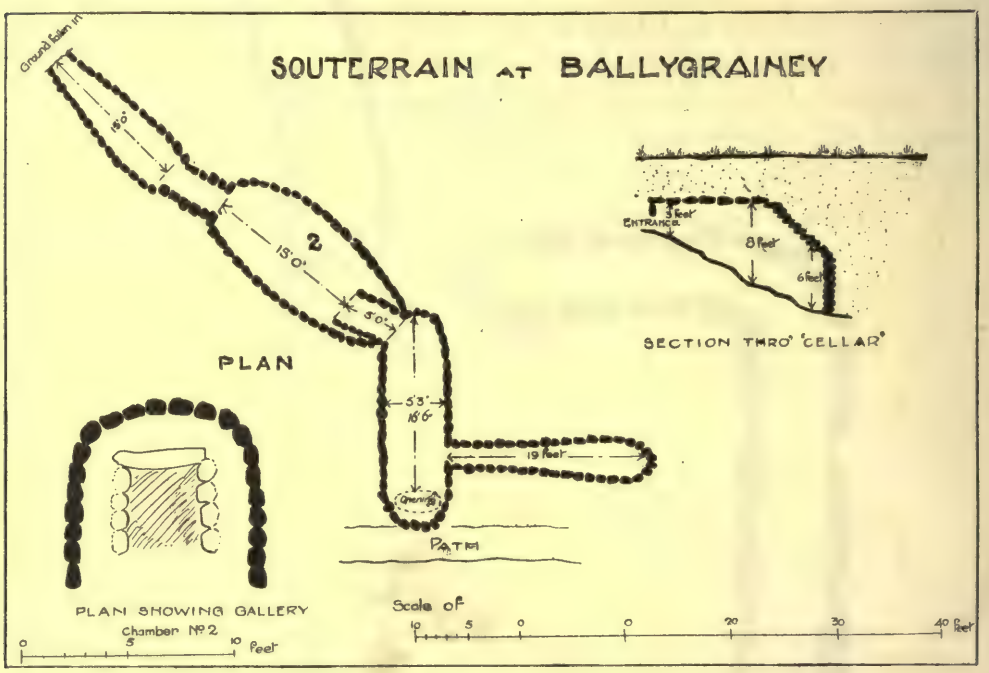


FIG. 7.

42 inches wide and 5 feet long, and just high enough to get through, the second chamber is 15 feet long, 5 to 8 feet wide, third chamber 15 feet long, 4 feet 6 inches high (Fig. 7).

At Cove Hill, near Rathmullan on Dundrum Bay, the cave is 120 feet long, 3 feet wide and 6 feet high, with a transverse terminal chamber 14 feet by 5 feet. It has very curious barriers 2 to 3 feet high (Fig. 8), as also has one a few miles distant. This neighbourhood is rich in a fine stone circle, standing stones, cromleacs, kitchen-middens, etc.



FIG. 8.

Half a mile away I found at Clanmagery another, 54 feet long. I asked had it ever been visited and was told once years ago by a very thin young man! One could well believe it (Fig. 9).

At Slanes, near Cloughy, is a very fine structure about 90 feet long. I found

it flooded on the occasion of my first two visits and only on the third did I reach the end (Fig. 10).

The cave at Ardtole, near Ardglass, is 118 feet 3 inches in length, with a transverse terminal chamber.

On the slopes of Slieve Croob, one of the Mourne Range, is one of the finest cromleacs in the country, known as Legananny cromleac, the cap-stone of which is 11 feet long; not far away, at the foot of Slieve-na-Boley, is the longest cave I have seen in the two counties. The entrance is very small; one feared to stick fast in it and run the risk of displacing the stones; in such an event entombment would surely follow (Fig. 11).

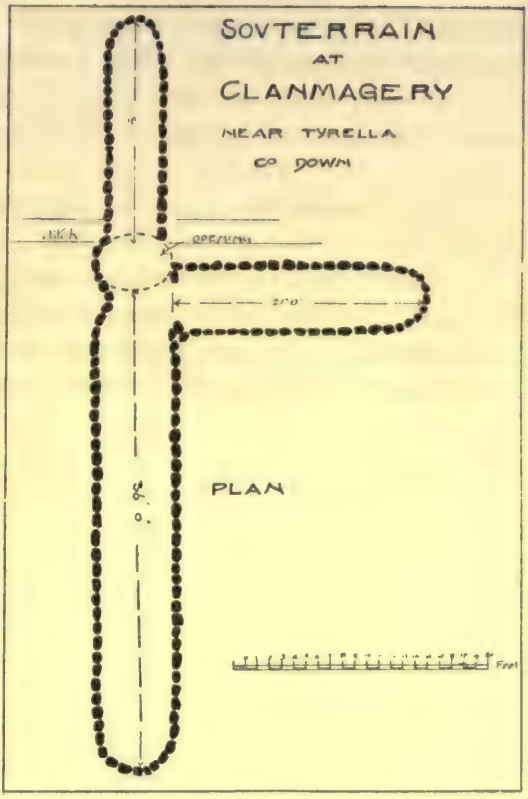


FIG. 9.

Recently I visited the chambered tumuli on the Loughcrew Hills in Meath. Quite near to them is a large souterrain with no very small openings, one passage ending in a great circular chamber, each course overlapping until closed by a single stone. A circular cave is in a fort at Lucan, co. Dublin; it is 10 feet in diameter and the same height. I have come across no structure of this shape in the north of Ireland except one now demolished which was really a tumulus; this type of

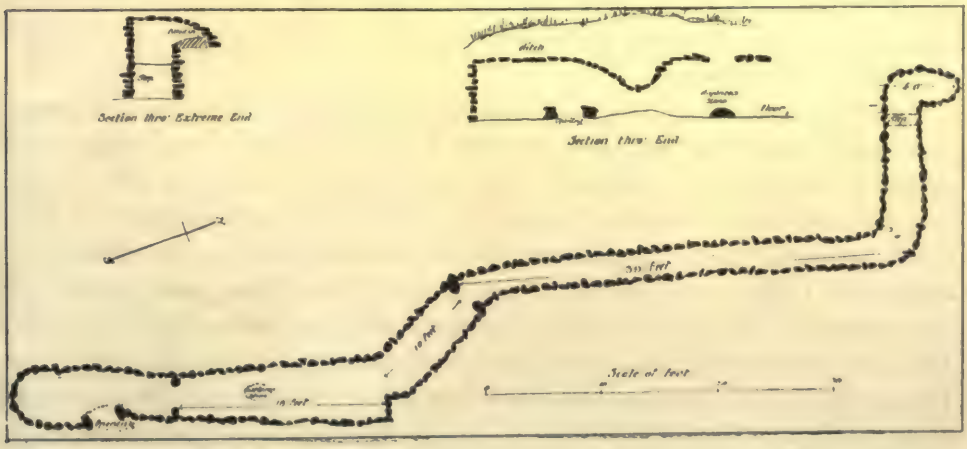


FIG. 10.

souterrain seems to me a link with the chambered tumuli at New Grange, Loughcrew, etc., though the latter are built of larger stones. In plan there is every diversity, some are mere passages, one is like the letter F, another like Γ, another the shape of an inflated stocking, some circular, an elongated W, and a crescent, etc., etc. Nowhere are the entrances oriented, but one thing is certain, it is almost impossible to get a good photograph of one in the middle hours of the day.

I should like to say something of tradition in relation to the structures. The building of them is nearly always attributed to the "Danes," the "Fairies," the "Good People," or in rare instances to the Picts. The Danes here referred to are not the modern Danes, but probably the Tuatha-da-Danaan, a people who are said to have lived in Ireland before the coming of the Celts. They are the "Fairies," and are said to have been of small stature, like "children," the country people will tell one. Innumerable are the tales of how a person's grandfather has seen them literally disappear into the earth and the hillsides, and how, even to-day, misfortune always follows the meddling with a cave, the cutting of a fairy thorn, or the removal of an earthen fort. Fairly educated people give instances, and will say they "don't altogether believe in it," yet they *know* of people dying within the year, their children being dwarfed, misfortune coming upon their cattle, etc., and very few people, even city-folk, will venture into these caves or palaces, and no wonder, for they are weird and uncanny, always enveloped in an awesome gloom. When creeping through the tiny doorways, if alone, one needs to summon some little courage.

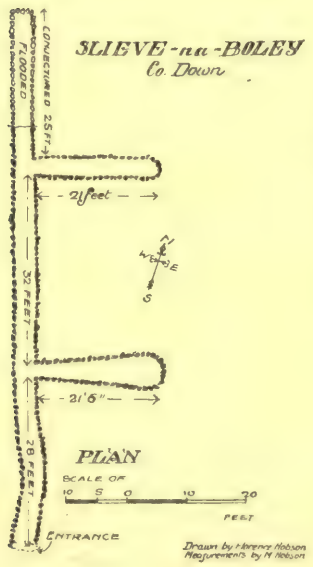


FIG. 11.

To superstition we may attribute their preservation in such numbers to-day; once that fear dies (it is only a question of time) they will disappear, for the owners will close or break them.

The first instance of an Ogam inscription being found in Ulster was at Carncomb, near Connor, a few years ago by the Rev. W. P. Carmody, B.A.; it was on the roofing stones, but so rubbed or weathered before being placed there that it was extremely difficult to decipher. Readings were made by Prof. Rhys and the late Dr. Buick, the former took it to be "Caig, son of Fobrach," a memorial to one who educated and baptized St. Cadoc, one of the early Fathers of the Church, thus bringing the age of this souterrain well on into Christian times (a second inscription is still in the cave). This is the seventeenth instance of Ogams discovered in these structures in Ireland. Though many souterrains may be of fair antiquity (judging by mode of construction, no mortar and no trace of arch, etc.), it is likely that some were built in more recent times. It is recorded that Donough Cairbreach O'Brien in A.D. 1242 built forts and

Brian Boru repaired many in which very probably caves occurred. We read that in 1317 "Donchad O'Brien before the battle of Corcomroe" summoned every man living in an "ooam" (cave) to his army (MacRitchie).

During the rebellion of 1798 the rebels took refuge in them; I know of several with this record.

Perhaps in Ireland no type of structure, whether for the living or the dead, has been so long in occupation, so long a thing made use of, more so even than the chambered tumulus, the cromleac, the kistvaen, the crannog, the bee-hive cell, or the Norman keep; even to-day the modern tramp does not disdain to spend a night in one of the outer chambers when it is big enough to admit him, and every one knows that the fairies of Ireland never forsook them and still continue to hold high revel in them.

NOTES ON THE INITIATION CEREMONIES OF THE BECWANA.

By the Rev. W. C. Willoughby,

Local Correspondent of the Royal Anthropological Institute.

There are two initiation ceremonies for Becwana youths, or, to be accurate, there are two sets of initiation ceremonies. The initiation ceremonies for boys are called *bogwèra*, and those for girls *boyale*. They are both referred to in Acts of Parliament and in current speech as "The Circumcision Ceremonies." But *circumcision* is a very insufficient translation of the Secwana verb *go rupa*, or of the nouns *bogwèra* and *boyale*.

The verb *go rupa* applies equally to *bogwèra* and *boyale;* but there seems to be no philological connection between the words, and I can discover no other words in the language that help us to determine the exact meaning of either *go rupa* or *bogwèra*. Of *boyale* we shall speak presently. It is most desirable, I think, that someone with the necessary training and the requisite apparatus should study these three words in the light of other Bantu tongues. And there is a fourth word that demands attention at the same time. *Bokgola* is the state of a person who has not passed through these initiation ceremonies, and it is hardly necessary to add that it is, therefore, a term of reproach for adults. But *bokgola* does not seem to stand alone in the language as the other words do. There is another word, if it is another word, said to contain a broader "*ō*" (*bokgōla*), which means moisture. But the Becwana themselves connect *bokgola* with the verb *go kgola* = to pull off the hoof, and they explain that the initiated are forbidden to eat the hoof of any animal, whatever that may mean. I have found a dozen Becwana giving the same explanation, but not one of the dozen could tell me why "hoofers" should be selected as the distinctive and contemptuous name of those who have *not* passed through the initiation ceremonies.

The central rite of *bogwèra* is the same in all Becwana tribes, and the same is true of *boyale*, but there is considerable variety in the attendant ritual. "In the initiation of men," said an intelligent and well-informed native to me, "the knife is one, and so it is in the initiation of women; but the songs and ceremonies differ in the different tribes. It appears as if the initiation itself came from one person, but in the matter of the songs and ceremonies the tribes make their own selection. They are not alike, and one is very quick to laugh at another."

It is evident also, I think, that the significance of the ritual is not known even by the tribes that preserve it. If the anthropologist can throw upon it the light of other lands and other epochs in the history of the evolution of man, it may become eloquent, and all the more eloquent because of the jealousy with which the secrets are guarded, the care with which the ritual is performed, and the high importance attached to its due fulfilment.

Before we can hope to do much in that direction, however, we shall have to obtain fuller and more accurate information concerning the songs and the ritual. But the method of direct interrogation concerning them will generally defeat its own ends. One has to trust, rather, to a wise engineering of conversation and a discreet exhibition of information already obtained. "To him that hath shall be given," is certainly true in this search after knowledge, and so I am encouraged to hope that a few scanty notes on what is, I am convinced, a very large subject will enable other explorers to push further into the country than I have ever managed to penetrate.

There is a story about the origin of these initiation ceremonies that is worth repeating. "In the old, old days," so the story runs, "there was a woman who initiated her husband into the *bogwèra*, and the husband told other men that he had been initiated by his wife. All these men gathered together and discussed the matter, saying, 'What shall we do, seeing that we are not initiated? Let us ask for initiation; let the woman initiate us.' And they agreed. Then they said to the man, 'We ask for initiation; we beg that your wife will initiate us, and that when she has initiated us we may kill her, so that the initiation may be ours.' And the man agreed. And the men gathered together and were initiated, and when they were initiated they killed the woman in the midst of their regiment. And thus women were no longer acquainted with the initiation; it came to belong to the men, whereas it used to belong to the women. But the women arose and began again to prepare their regiments, gathering the girls together and initiating them, but not in the knowledge of the men; and from that day to this there is no one who knows what these women do." So much for the story. Nothing more is known of this first man who was initiated, except that he was a great chief who lived in the East, as did the ancestors of all the Becwana, and was accustomed to see the sun rise over the sea.

Now, from this point I think it will be well to confine our attention to the *bogwèra;* we can deal with the *boyale* afterwards if an opportunity occurs.

The date of the *bogwèra* depends upon the discretion of the chief to a certain extent. It is held every fourth year, but the chief will sometimes delay the *bogwèra* or hasten it, for the sake of having a son of his own or, failing that, a nephew in the ceremony. He may order it for any date he likes in February and March, but other months are barred even to his discretion. As a matter of fact it nearly always begins with the new moon, Tlhakole, that is, February.

When the moon, Tlhakole, is seen the chief summons a great tribal assembly after the form which they call *lecholo*. That is an armed assembly of all adult males held at sunrise at some appointed place in the veld at some little distance from the town. All adult males are expected to be present upon such occasions, and they go forth by their regiments with all the shouting and excitement of a war. When the chief has formed his assembly in the usual way, he makes the simple announcement that this is the assembly of the *magwèra*.[1] Then the people scatter and seek their own children who are ready for the ceremonies.

[1] Bo-gwèra (sing.); Ma-gwera (pl.). Quite regular.

Those who have seen a real Becwana town must surely have noticed that it is made up of circular villages. These villages are grouped together in what one may call wards. Sometimes a village is a ward in itself; sometimes several villages form one ward between them. The Secwana word that I have translated ward is *lekgotla*. Now, in the first part of the ceremony the children are assembled according to their wards. All the boys of a certain ward who are ready for the ceremony go forth to an appointed place in the veld, guarded by their fathers and elder brothers, in fact, by all in that ward who have already been initiated. The place appointed is always where there are *moshu* trees growing. The men cut down these trees, and the boys are set to take off the inner bark of the smaller branches and chew it well, so as to prepare the long fibrous threads of this bark. These threads are taken from the boys by those of the officiating regiment who are present (that is, the last regiment that was initiated), and are by them woven into the kilts which are to be worn by the boys at the *bogwèra* ceremonies. These kilts are very much like the string aprons that little Becwana girls in country districts very commonly wear, except that they are long enough to go right round the hips. As fast as these garments are prepared they are hidden away, for it would be a serious desecration if any woman or uncircumcised person were to look upon these sacred garments, or even upon the boys, while they are chewing the thread out of which the garments are made. It is a matter of ritual that the boys shall be drawn up facing the sun, the whole day through, while they are chewing the thread. There is no traditional explanation of this ritual, but it is thought that it is to prevent the uninitiated boys from seeing the sacred garments that they are afterwards to wear. While the boys are kept chewing this thread, there is much questioning among them as to the meaning of what they are doing, but they are always kept in ignorance of the garments. Of course, there is much dancing and singing while the chewing and the weaving goes on, and the boys are allowed to take part in it. This is called the *go rèma* (the chopping) ceremony, and it is continued day after day, beginning at early dawn, for the greater part of the Moon *Tlhakole* (February). The boys return home at night and take their food in the usual manner. Before leaving this part of the subject, it ought perhaps to be said that there is nothing peculiar to the *bogwèra* in the songs that are sung during the *go rèma* ceremony; and also that the garments prepared are called *moshu*, like the tree from which the fibre is taken. I hear that some tribes do not think it necessary that the boys should face the sun while chewing the bark, holding that this is a modern addition to an ancient ceremony.

On the evening when the moon *Mophitlho* (March) is seen all the boys proceed to the *kgotla* (place of tribal assembly) and spend the night there singing and dancing. After that they must not go home to their mothers. But all the initiated from the tribe, and other initiated people from other tribes that may happen to be in the town, will assemble in the morning and escort the neophytes to their camp; and the custom is that the whole party should *run* forth from the town to the camp. Their phrase is: *bogwèra boa go siana.* Right through the

initiation ceremonies, both for the boys and for the girls, there are hints of alacrity and of cheerful submission.

The camp to which the neophytes proceed has been previously prepared for them. The chief has selected the spot that seems most suitable, and a day or two before the men and women of the town went thither and built hastily constructed booths of poles and branches and grass. The camp must be near a river, preferably in the neighbourhood of the fountain. But whether this is rendered necessary by the need for a plentiful supply of water for the sake of the ceremonial ablutions, or whether the ceremony itself is connected with the idea of a river-god, I am unable to determine. The camp is commonly called *bogwèrèlō* (the place of the *bogwèra*). In construction it is said to resemble the town from which the neophytes have come. But this seems to mean nothing more than that each *lekgotla* is represented by a booth, and that these booths are built inside the fence of the camp in the same order of precedence as are the *dikgotla* in a native town. The camp is surrounded with a fence of interwoven bushes made very strong. If it is a large camp there may be several entrances, but if small there will probably be one entrance only. Each hut is provided with a narrow doorway or, rather, a wide doorway divided down the middle by a pole, which thus forms two narrow doorways. One is called *kōce*, and is guarded by a sentinel. The boys enter by the other door, which is called simply *kgōrō ea banna* (entrance of the men). This arrangement of the double entrance appears to prevail among the northern Becwana tribes, but not among the southern Becwana. Among some of the kindred tribes in the north there is a custom of having the entrance to these huts very low, and emphasis is laid upon the ritual necessity of the low portal.

I can get no satisfactory information concerning this word *kōce*. It may possibly be connected with *kobe* (the barb of a spear), or possibly with *kōcō*, which seems to mean a hissing or chirping noise. Some Becwana, especially from the southern tribes, assert that they never heard the word, while many from the northern tribes are quite clear as to the use of the term. Two or three natives told me that they had not heard this word before, but that the first *bogwèra* song among some of the Bapedi is called *kosha*.

I have already referred once or twice to the officiating regiment, and it is important that I should explain this phrase fully. First then you must know that every Becwana tribe is divided into regiments, and that every man and every woman in the tribe belongs to one of these regiments. In a sense their regiment is fixed for them by their age, and this is so true that when one wishes to enquire the age of a Mocwana one usually asks the name of their regiment. And yet, as a matter of strict accuracy, it is not the age but the date of initiation that decides the regiment; for the regiment consists of those who take the initiation ceremonies together, and it is quite possible for a well-developed youth to take the ceremonies four years before his less fortunate senior. The officiating regiment to which I have referred is always the last regiment that was initiated. They are the *badisa*

ba bogwèra (the herdsmen of the neophytes). Their proper official designation is *makgaye* or *makgaiyane*, which is the diminutive of the same word. Its singular is *kgaye* or *kgaiyane*. And here we have another word that would probably repay investigation. It at once suggests the verb *go kgayayèga* (to rage, to become furious, to trumpet as an elephant in anger). Now the *makgaye* are, in a sense the priests of the *bogwèra*. I do not mean that there are any sacrifices, but that they are the men whose function it is to preside over the sacred ceremonies; and, to one who knows anything of the very low standard of sexual morality that prevails among the Becwana, it is not a little astonishing to discover the notion of a virgin priesthood. There is still some doubt in my mind as to the exact meaning of this virginity. I have been told again and again by men who would not willingly mislead me that of the officiating regiment only those are allowed to perform the duties of the *makgaye* who have never known women. And I sometimes wonder whether there was, perhaps, a time in the far distant past when this demand was seriously enforced. But, as far as I can make out, the practice at present among the strictest tribes is to demand that only those shall perform the duties of the *makgaye* who have maintained their chastity ever since the date of their own initiation—that is, for four years past.

At the very beginning of the "ceremonies" the elders will examine the members of the officiating regiment as to their chastity. Nothing happens in a Becwana town that is not very generally known, and a young man's chance of deceiving his neighbours in a matter like this is not large. His comrades would very readily expose his unworthiness if they knew anything of it; and if he succeeded in deceiving them and it were afterwards discovered, he would get a most horrible hammering from the other members of his regiment. But I suppose it is the supernatural penalties that would act as the stronger deterrent. For it is universally believed among them, that if one unworthy person performs the duties of the *makgaye* the mortality among the neophytes would be very great, especially among those from his own *lekgotla*.

If a member of the officiating regiment fails to satisfy his elders of his chastity since the date of his own initiation, he will be severely beaten by his father or his guardian, if his father be dead; he will be forbidden to enter the huts of the neophytes, or to touch the food that is prepared for them, or to apply the switch to anyone of them; and he will be scoffed at by every neophyte in the camp. The officiating regiment is obliged to stay in the camp throughout the whole of the ceremony, which lasts two months; and the fines are very heavy for anyone who fails. The unworthy members have to remain for the same period, but in some tribes they are not allowed to enter the sacred enclosure, and in all tribes they are forbidden to enter the huts of the neophytes. They have to sleep outside, and to get their own food sent specially from their own homes. They have to sit apart and see the others sharing in the *bogwèra* meals. If the pots in which they take their food were but to come into contact with the pots from which the neophytes and the worthy *makgaye* take theirs, it would be a most

serious offence; and the supernatural powers would visit the offender with some terrible calamity.

Members of older regiments constantly visit the *bogwèra* camp and partake of the *bogwèra* food; but they take their food from other pots, which must not be permitted to come in contact with the pots of the neophytes; and even among these it is demanded that they shall avoid women during the whole time of the *bogwèra* camp.

The first ceremony of the *bogwèra* is that of circumcision. It is performed on the day of their arrival in camp, and the greatest care is taken to preserve a correct order of precedence. This does not necessarily mean that the children of the chief who orders the ceremony will be circumcised first, for there may be boys who are his superior in birth. There is a precedence among the tribes as well as among the children of a tribe. In the Protectorate, for instance, the Bakwena would take precedence as against the Bangwaketsi and the Bamangwato, even if the ceremony were held in the town of one of the latter tribes, and similarly the Baralong ba ga Maweba would take precedence over all other branches of the Baralong and Batlhaping. But they would all yield to the Bahurutshe of Gopani's stad. And even among the Bahurutshe there is a small section, called the Bo-Manyana, who are superior to the reigning family. In a *bogwèra* camp the hut of this section would be on the sunrise side of the camp, just as it would be in the arrangement of a town; for though it is good that smaller men should build in their shadow, it would never do that the shadow of smaller men should fall upon them. These boys, as I have said, will be circumcised first if there are any of them present, and precedence will be carefully observed right on throughout the ceremony till rank can be traced no further.

The circumcision is sometimes performed by some of the *makgaye* of the ward to which the boys belong; but more frequently the chief appoints an older man of acknowledged skill to perform the operation for the whole regiment. There is no official name for this man. He uses an ordinary knife which he has sharpened specially for the purpose. The thumb of the operator is inserted in the foreskin and a circular cut is made right round. There is no attempt to stop the bleeding: nothing is done with the blood; and the amputated foreskin is simply thrown away. The boys are not allowed to know who circumcised them, and they are, therefore, blindfolded for the operation. The position of the boy during the operation is said not to be a matter of ritual significance; but as a matter of fact he is always compelled to lie upon his back on the ground, with his legs wide apart; and he is held firmly in that position. He makes it a mark of manhood to lie still without crying or wincing; but if there should be any obstreperousness, the switch is freely and unhesitatingly applied. Perhaps I should mention that the word foreskin is the same as that for mouth, *molomo.*

From the time of their circumcision and right on through their stay in camp, the neophytes wear no clothes and have to sleep on the bare ground. On the morning after the circumcision, however, they don the *moshu* or fibre-kilts for the

first time; but these sacred garments are worn only as the insignia of the dance, and are laid aside each day when the dance is done. They smear themselves, also, with white clay. And the dressing-song runs:—

A bo itlhamèla!	Take warning!
Boshweu yoa rara	The whiteness of the father
Borona molomo.	Is unbecoming on the mouth.

They explain their use of white clay in two ways. In the first place, they say, it keeps them from being seen by women; and throughout the whole of the ceremonies it is a matter of first-class importance that no woman should look upon the neophytes, or their camp, or their clothes. It is true that women help to build the camp, but that is before it is ceremonially founded. The second explanation is that *serètse seo se tlosa dikaō tsa bosimane* (the white clay removes the signs of boyhood).

Purification by water is, also, a great feature of the ceremonies, but I have not been able to ascertain whether the water purification precedes the daubing with white clay. Upon the whole it would seem that the daubing with clay comes first, but there is a lack of definiteness about my informants when they speak of this matter and that makes one hesitate to build upon such a foundation. However that may be, it is certain that the *makgaye* compel the neophytes to plunge into the pools in the river-bed every morning. "There are as many washings in our *bogwèra*," said one of my informants, "as there were among the Jews of whom we read in the Bible. It is not a matter of dirt: it is a part of the ceremony." And they say that this is the reason why the camp has to be founded on a river.

But the Becwana of old rubbed themselves with white clay as a matter of cleanliness. The old practice was to anoint the whole body with what they call *lecuku*, that is with a pure oolitic hæmatite ground into a fine powder and mixed with fat. They regarded this as a mark of Becwana birth. "Other tribes," they say, "smear with fat; but the Becwana smear with *lecuku*." This mixture of *lecuku* and fat will not, of course, yield to water; and it was common to rub themselves over with white clay whenever they wished to remove the old coating before applying a fresh one. As for the purification with water, that is still common among them. If a person is absent from home for a year or two, he will not think of touching his friend when he returns, till water is provided, when each will take a little in the hand and sprinkle it over the other.

The neophytes are marched to the water twice a day, morning and evening; and on the way they are guarded as prisoners are, to use the phrase of my informant. If any woman or uncircumcised person is seen in the distance, the officiating regiment set up a great yelling; and quite lately deeds of violence were done in the Protectorate because the yelling was not heeded. In the old days it would have meant death for the offender; and certainly it would have meant death for any neophyte to allow himself to be seen by a woman.

Singing and dancing are matters of every-day routine with those in the camp. The more important of the dances take place within the sacred enclosure. But every march to the water is the occasion of dancing and singing. There are no special songs for this occasion: they sing any that they know; but there are one or two that are always in evidence at such times. One is:—

Phuduhudu tsaaka	My stembucks
Metse ga di a nwe:	Do not drink water;
Di nwa segotlèlō:	They drink the mirage:
Di khutla botau—	They shrink from the lions—
Botau le nkwe.	The lions and leopards.

Food is by no means the least important part of the initiation ceremonies. It is cooked by the women in the town, whether it is meat or porridge; and morning and evening the women and girls go forth carrying the food for the neophytes to some place that has been previously appointed. This place is always carefully arranged so that the camp cannot be seen from there nor from the road that approaches it. The women place the food upon the ground and retire from it. Then the *makgaye* approach and take it, driving the women away with more or less of action calculated to inspire fear. The *makgaye* take this food to the camp, and the worthy among them are invited to join the boys at their meal. I have already stated that the boys of a ward live together in the hut or booth that was built for the use of that ward. These boys have their food in common, eating together out of a large wooden bowl.

For about the first week they eat nothing but porridge, and there is a ceremonial way of eating it. If a boy were to dip his fingers into his porridge as he was accustomed to do at home, it would be a grave fault, and he would be immediately and severely switched. The boys from the same ward surround their great wooden bowl, kneeling on the ground; and each boy must hold his left hand above his head, scrape off a portion of the porridge with the side of his right hand, and thus convey it to his mouth.

After the first week there is always an abundance of meat. People make it a point of honour to provide liberally for their children who are at the ceremonies. And often a rich man who has no child of his own at that particular initiation will send gifts of food to some boy who is there. If meat is slaughtered for the ceremonies, it is important that none of it should be tasted by others till the neophytes have tasted it.

The neophytes spend some portion of every day hunting small animals with cudgels. They hunt especially the smaller antelopes and the hare. But the neophytes are forbidden to eat these things. They are eaten by their elders who may be present in the camp. It is permissible, however, for the *makgaye* to eat of these things with the elders who may happen to be present when the game is brought home.

Perhaps the most prominent feature of the initiation ceremonies after the act

of circumcision is the application of the switch. The significance of it appears to have been lost, but it is very freely used. The boys are roused at cock-crow every morning and taken to the place of assembly in the centre of the camp, for a whipping. The switch used is always the *moretlwa*, though in ordinary life the Becwana prefer the *moselebele* (*Kareeboom*). There is, apparently, no attempt to draw blood with the switch; but it is applied to the back of the neck and to the shoulders, and many of the boys have their neck and shoulders considerably swollen. I should have noted the fact that the switches are used unpeeled. At the time of whipping the boy is always reminded of his faults. He is accused of having let the goats or cattle stray, or of losing the food or wasting the water. These accusations must have reference to the past, because the boys have no work of any kind to do during the ceremonies. Every slip which a boy makes in reciting the initiation songs means a special application of the switch. To quote the words of an informant, the idea is, *Mosimane ke wèna; u tlè u utlwè rragō sentle; kea go itaea, kea go laèla yalô go re u utlwè rragō sentle le mmagō* (You are only a boy; learn to obey your father properly; I am thrashing you, and thus I am teaching you to obey your father properly and your mother). There is a proverb concerning this: *Bogwèra go utlwa bo ditèwa* (The neophyte hears the law while he is thrashed).

But it is very important that the switch should be applied only by such of the officiating regiment as have maintained the chastity qualification. If it should be applied by one who has broken his chastity obligation, the neophyte's penis will swell and will cause his death.

As a side-light on the possibilities of this whipping, it may not be amiss to quote a story concerning Makabe, a chief of the Bangwaketsi some generations ago. It is said that Makabe wished to kill his son Cose, and had rubbed some poison on the *bogwèra* switch with which he intended to whip the boy. The boy was, however, warned; and when his father took the poisoned switch to whip him, he begged that another switch might be used.

Of course, there are *maōma* (secrets) of the ceremonies; and it is likely that they are numerous. They are difficult to discover, because it is thought very dangerous to give away the secrets of the ceremonies.

Among the Batlhaping and the Baralong (and the former are an off-shoot from the latter), if a stranger approaches the camp, one of the *makgaye* will meet him outside and will give him the sign. This is made by holding the right hand before the eyes with the two forefingers curved forward, the back of the hand being toward the face and the thumb keeping down the third finger. This sign may be given in silence, or it may be accompanied with the question, *Kgome eo mañ?* (Whose ox is it?) In either case the stranger should reply, *Kgomo eo Toma* (Toma's ox). Then follows another question, *Toma eo mañ?* (Whose Toma?) To this the reply is, *Toma eo Monoge* (Monoge's Toma). This begins a long series of similar questions bringing out twenty or thirty names in succession. This formula is known as *Kgomo eo o Toma—Toma a Monoge.* It is thought that Toma and Monoge were

chiefs of the Becwana—masters of the law, I have heard them called—and that the other names are those of ancient chiefs in the succession. It would be of interest if we could secure the whole formula as it is used in each Becwana tribe and compare the one with the other. It might indicate exactly the relationship of the several Becwana tribes.

With regard to this name *Toma*, it may not be amiss to mention the fact that the piece of second importance in Becwana dice is called *tome*, when it stands on the narrow side, and *thoyane* when it stands with the hollow side uppermost. There is not a very great difference between *tome* and *tōle*. And there is an old proverb of a boastful character, which is used by the Baralong, and which calls them the calves of *tōle*. It runs, *Dinamane tsa tōle, Baralong di ya mogope di olala* (Tole's calves, the Baralong, will eat the grass out of an old roof and just look philosophically from side to side).

Mafhifho is another secret word. It is the reply of the neophyte to every allusion to the town. If a person comes to the camp from the town he is sure to test the neophyte by remarking that he comes from visiting the women, upon which the neophyte is bound to reply *Mafhifho! Mafhifho!* If he fails to make this reply, he gets an extra whipping. This word is said to possess a deprecative meaning and is the same thing as saying *puonyana hèla* (empty words). Its connection with *bohèhō*, which means lightness as well as speed, would seem to warrant one in translating it vanity.

Another pass-word of the ceremonies is *tswi* or *tswai*. It is used especially to indicate the fact that one of their craft is returning to them after an absence. And more frequently it is embodied in a short song, which runs,

Tube, modikana!
Tswi, modikana!
Di gōne di moo.

I cannot translate this, because I am unable to give a rendering of the two principal words. *Modikana*, or the plural, *madikana*, which is often substituted, is a common name for the neophytes. It comes from the verb *go dika*, to surround. The camp is often called *bodikana*. *Di gōne di moa* means they are there, and the particles suggest that the "they" refers to oxen. But *tube* and *tswi* are ceremonial words of which I can get no translation: the meaning of them seems to have been forgotten. It is said that *tube* is used in the initiation ceremonies to mark the end of verses in initiation songs. And *tswi* is the pass-word itself. Now if the secret word is conveyed thus in a song, the word *Mafhifho*, to which we have already referred, must be embodied in a song as the ritual reply:—

Mafhifho! Digota molelo!	Vanity! Fireplaces!
Mafhifho la bogodicaba	Vanity of running round the camp.
Godicaba golo.	Going round often.

I have attempted a translation of this song, but I am afraid my translation can only claim to be one of the possibilities. In songs and proverbs many old

words occur, and the present generation seem able to give one no more than a tentative explanation of them.

U cwa kae? (Where do you come from?) is a very ordinary Secwana question which usually follows the greeting of a traveller. But there is a special *bogwèra* reply to it:—*Moshu u ko mhachwa.* I have found no one who has been able to give me a definite translation of the last word; but it has been suggested that the phrase may mean: "Fibre-kilt, please bestow upon me."

Singing and dancing are the constant employments of the neophytes in the camp. It is held very strongly that the neophytes should be kept constantly employed at something or other during the whole time they are in the camp There must be no time of leisure. This strikes one who is familiar with the Becwana character as the most remarkable feature of the initiation ceremonies; and singing and dancing are made to fill up all the intervals. Many of the songs sung are not peculiar to the ceremonies, and may be heard frequently in the miscellaneous assemblies of town life. But others, especially the *Dipina tsa molaō* (Songs of the Law) are so sacred, that death would be the penalty, in the old days, of singing one in the presence of women. And it does not mean merely that the offender would be killed by his neighbours, though that would probably have been the case; but the chief himself would enforce the penalty. Things have changed now, of course, but it is still difficult to get the words of the Songs of the Law. One of them is called *Sekidibyana.* It begins:—*sekidibyana sa motlhaka se gana ke sena motse.* But I have not succeeded in getting more than that, and I can find no one who will tell me what the first word means. I give a few of the Songs of the Law, accompanied by the best I can do in the way of translation; and may I take the opportunity of saying that I shall be grateful for any assistance that those conversant with Secwana will render me in the correct translation of these songs. I am quite convinced that some of the songs are intentionally ambiguous, and that sexual suggestions are often covered by an ambiguity of phrase that upon the surface suggests something much more innocent. Scarcely any of them seem to have an ending, and some of them appear to lack a beginning. It is probable that what I have secured are only fragments of much longer poems (if I may use that word), and it is scarcely likely that there are many people who are able to recite the complete poems. There are no titles to many of these songs and the numbers are inserted here merely for the convenience of this paper.

1. *Mogae? Rramotho! Rramotho!*	At home! One's father! One's father!
Rramotho ga u rogwe.	One's father is never cursed.
Oa re a rogwa.	Should one curse him
Go cwa o boifhshè,	He will be afraid,
Go boifhshè inō,	Afraid of the tooth,
Inō letèlèlè,	Even the long tooth
Le yañ nchotlwane,	Which eats tripe
Le bokutukutu,	And chitterlings,
Nama tsa bagolo.	The meat of old men.

2. *Ñwana a dikgomo!* — Child of the cattle!
Oa re di gañwa, — He, when the cows are milked,
A tlhomèlè thebe; — Takes up his shield;
E re motshegare, — And when it is day.
Tau chwara kgomo, — And the lion seizes the cow,
A ñate ka kobe, — He pierces with his spear,
Kobe moñatana; — The piercing spear,
Mo ñata dibata, — He pierces the beasts,
Dibata, botau, — The beasts—the lions,
Botau le nkwe. — The lions and leopards.
Ñwana a dikgomo! — Child of the cattle!
O lo fhitlhèla — Whenever you see
Le dikgomo, — The cattle,
O se ka oa re, — Do not say,
"Rra ga eo!" — "Father is not here!"
Rragō monna o sele. — Your father is another man
Oa lethebe; — Of the shield;
O tlhabane. — He fights.

3. *Phofhule! Phofhule!* — Young elands! Young elands!
Phofhule tsa lecholo, — Young elands of the hunters.
Phofhu ke re loshwa — The elands when dead
Lwa ntèma naka; — Their horns are cut off;
Ea re di yewa — And when they are eaten
Marapō a cōnè — Their bones go to the men;
A èè banneñ; — The men, too,
Banna le bōne — Take them away.
Ba a isè ñape.

Phofhule! Phofhule! — Young elands! Young elands!
Matlhō di ñapane, — They scratch each other's eyes,
Di ñapa barwadi. — They scratch the children.
Barwadi le bōne — The children, too,
Ba di ñapèlaè! — Let them scratch for themselves!

Phofhule! Phofhule! — Young elands! Young elands!
Dia lo bolawa, — When they are killed,
Marapō a cōna — Their bones
A èè banneñ; — Go to the men;
Banna le bōne — The men also
Ba a isè naapè, — Take them away (for safety)
Naape ea thèola, — It goes down,
Thèola ritè, — Goes down properly,
Ritè le ka kgomo, — Properly, whether it is the cow,
Le ka kgomo phachwa. — The black and white cow.

4. This song is entitled *Molaō sekutlwō.*

Mma se ntiè	Mother, do not delay me,
Ka pitsa ea mosho.	On account of the morning pot.
Kgomo di bolola ;	The cattle are loosed ;
Tilodi coorra,	The black and white of my father—
Namane a kgomo,	The calves of the cattle,
Erile di bolola,	When they were loosed,
Tilodi ea tlhaba thamaga,	The black-and-white one gored the red-and-white one,
Ea senyetsa ñwe matsiba,	Spoiling its skin,
Matsiba a go segwa thebe,	The skin of which shields are cut,
A segwa thebe di thamaga,	The cut-out shields, red-and-white,
Thamaga tsa bo semareta,	Red-and-white of the honoured ones,
Mareta mareta dikōma,	Who honour the laws (or poems)
Modika ! kōma di ratilwe !	Neophyte ! The laws (or poems) are liked !

5. *Banyana ba ga mogolle !* Children of my elder brother !
Basimanyana ba ga rra ! My father's boys !
Nna, molaō ke o itse ; I ! I do not know the law ;
Ke itse oa dikgomo, hèla ; I know the law of cattle only :
Ke ōna ka o laèlweñ. It is that that I was taught.
Kgomo ea re di bolola, When the cattle are loosed
U tsèè thebe u tlhomèlè ! Take your shield and arm yourself !
Ea re kwantle kwa gareganaga When they are out in the midst of the veld
Tilodi ea tlhaba thamaga, The black-and-white one gores the red-and-white,
Ea senyetsa ñwe matsiba, Disfiguring its spots,
Matsiba a go segwa thebe, Spots for cutting out shields,
A segwa thebe ditoñwana, Cut-out shields ! Little shields !
Toñwana tsa bo semarata. Little shields of the honoured ones !
Madika, marata-dikōma ! Neophytes ! Lovers of the laws (or poems) !
Modika ! Kōma di ratilwe ! Neophyte ! the laws (poems) are loved !

6. *Rrañwane a motho* A man's uncle (father's younger brother)
O mo gapa kgomo. Takes away his cattle.
A a lesiwè naeō ; Let him have them ;
A a dikè a gamè ; Let him milk the whole season ;

A a gamèlè bana ; Let him milk for the children ;
Kapo mosimane, Perhaps it is a boy—
Modisa a kgomo ; A cattle-herd ;
Kapo mosetsana— Perhaps it is a girl—
Mogogèla metse. A water-carrier.

7. *Segodi se marulaneñ* The hawk on the roof
Se itsa maeba go sèla. Forbids the doves to feed.
Bonnaka lo se bolaèè ; Kill it, you younger brethren ;
Lo sè chware lo se bolaèè ; Catch it and kill it ;
Se leta tshimo ea Morena. It scares birds from the chief's garden.

8. *Kgano o ya tsiè ;* The meer-cat eats the locusts ;
Bata dia yana. The wild beasts eat each other.
E re ha di yana When they eat each other
Lo mme di yana ; Just let them eat each other ;
Lo na botshabèlō, You have a refuge,
Botshabèlō boeo, An ultimate refuge,
Boeo ke Mokwena, Which is at Mokwena's,
Mokwena ga lota, Mokwena of the distance,
Ga lota ya tshèphè, The distance of the spring-buck,
Tshèphè moririma. The spring-buck, the wanderer.

Note.—Space does not permit me to make notes on these Law-songs, though there is much to be said about each of them. It ought to be said, however, that the above song is peculiar to the Bamangwato, whose hereditary refuge in a time of dynastic quarrels was the Bakwena town.

9. *Molelo a o tukè ka kwa kgosiñ !* Let the fire burn at the chief's !
Ba dintlha ba o latè ba o tsèè ! Let those round there take it !
A ke ne ke tla a fsha ! Was I to be burnt.
Ke se gauhi le kupa a molelo ! Who was not near the embers !
Molelo tlhase di fhisa baori ! Of a fire the sparks burn those who are warming thereat !
Ditlhase di fhisa baori ! The sparks burn those who are warming thereat !

The foregoing are but a few samples of the very numerous songs of the law that are sung at the initiation ceremonies. They are, perhaps, fair illustrations of the best teaching of the camp. But there are other songs of quite another order. In conversation with a *mocwana* about the obligation of chastity which lay upon the regiment that had gone through the initiation ceremonies and had not completed its term of priesthood, I inquired whether he really meant me to believe that the teaching of the camp was in favour of chastity ; and when he asserted that it was, I provoked him into supporting his assertion with a sample

of such teaching. The following is the song of law with which he supported his contention. It runs:—

Phisana! Phisana!
Phise mela naka:
U tlo u itlhabèlè!
Dira coo polo,
Ga twiwa di etla.

I append the translation as a note at the end.

Now to return to our narrative.

The neophytes will remain in their camp during the moons *Mophitlho* and *Moranañ* (March and April); and when the moon *Motsheganoñ* appears (May) they return home. They first shave their heads roughly, and then leaving their regalia in the camp they go to the water and bathe, after which they anoint the body with the preparation of oolitic hæmatite and fat that I have already referred to, and apply what they call *sebilo* to the hair. *Sebilo* is a pure hæmatite which is first ground, then washed with water to remove the redder powder. The result is a reddish-black paste of iridescent appearance when dry. This is applied to the hair of adults as an adornment. Then they array themselves in new garments that have been sent them for the purpose; and towards evening they burn their camp with all its regalia, and return home. When their heads are shaved they receive their regimental name from the chief; and they are told that they are now men and warriors, and that their lot will be to die in battle after they have felt and endured the pangs of hunger. From this time they are called *dialogane*. It is not easy to translate this word, but perhaps I shall not be far wrong if I render it "the returners." They are now people of importance, and they must walk with downcast faces and solemn mien, each carrying his cudgel and his switches. At sunset they proceed to the great place of tribal assembly, where mats are spread for them, upon which they spend the night. Early next morning their heads are properly shaven by the women (for it is held that men are but bunglers at shaving; it is women's work like cooking and smearing and cupping and gardening), and their faces smeared with a decoction of pumpkin seed. Then they are presented with shields and spears, and they go out to herd the cattle. Towards evening they are met by the men and their faces marked with white lines. There is a white line drawn down the centre of the forehead and extending along the ridge of the nose, and another line which crosses this one on the forehead and extends downwards on each side outside the eyes and the cheeks. Whether these lines are in any way connected with war it is hard to say, but it ought to be mentioned that the old custom was to mark the body all over with white wavy lines before going into battle.

On this first day, which is called the day of the Thoyane, the *dialogane* will return to the place of tribal assembly before sunset and will lie upon their mats; and all the men and women of the town who have passed through the ceremonies

will gather together in the place of assembly and sing the Thoyane songs right through the night. During this time it is the business of the officiating regiment to shield the *dialogane* from the gaze of the women. The women will occasionally try to rush the regiment and pull the blankets off the sleepers. But the *dialogane* must not resist, or laugh, or speak. They must maintain a solemn expression, with downcast eyes. It is most important that their teeth should not be seen. They must simply lie still and let the guards protect them.

There are quite a number of Thoyane songs, and I give two of them :—

1. *Gokgo ! Gokgo, he ! Gokgo !*	Thump ! Thump ! Oh, thump !
Se robaleñ.	Do not sleep.
Baa ya ditlhōgō.	They are eating the heads.
Se robaleñ.	Do not sleep.
Gokgo ! Gokgo, he ! Gokgo !	Thump ! Thump ! Oh, thump
Se robaleñ.	Do not sleep.
Ba boa tlhōgō.	They are skinning the heads.
Se robaleñ.	Do not sleep.
2. *Ñwana a mma !*	My mother's child !
Ga kea utlwa ka moñwe ;	I have not heard from anyone ;
Ke molobecwi.	I am one from whom it was hidden.
Oa ga mma !	My mother's child !
Ga kea utlwa ka moñwe ;	I have not heard from anyone ;
Ke molobecwi.	I am one from whom it was hidden.

For about a week after the return of the *dialogane* these festivities continue. Every day the *dialogane* will go forth to herd the cattle or to hunt, and every night they will sleep on their mats in the place of tribal assembly, which is a manly thing to do ; and throughout the whole time they must preserve a solemn mien when women and girls are about, and they must talk only to men. When there are no women and girls near they may be as lively as they please ; and every evening the unmarried girls who have passed through the *boyale*, or initiation ceremonies for girls, will assemble in the place of tribal assembly and try to see the *dialogane* ; and night after night the officiating regiment has to protect them from the prying eyes of the girls. On these nights the girls do a great deal of singing, and among the Bakhurutshe and some of the Makalaka tribes the singing takes on the character of a musical dialogue. The Bamangwato and most of the southern Becwana have the same Thoyane songs as the Bakhurutshe and Makalaka, with everywhere a little tribal variation, of course ; but it is doubtful whether they had the same *Dipina tsa maitishō a dialogane a motlhapudi*—that is the name by which these songs are called. *Motlhapudi* means clean, one who is clean. But it is the word for an overseer of the *bogwèra*. *Maitishō* is used in the sense of leisure. So that *Dipina tsa maitishō a dialogane motlhapudi* may be rendered "Songs of the

leisure of the returners, the clean ones." These songs consist, so I am told, of hundreds of questions and answers like the following. They appear to be distinctly above the general level of Becwana songs.

(One girl)	*He! He! Naledi!*	Oh! Oh! Star
	Mosipidi! Mokotlamèdi!	Traveller! Thou who sinkest below the western horizon!
(Men, all)	*Ka re, Tsela ga u e bōnè, he!?*	I say, Oh! do you not see the road?
	Mosipidi! Mokotlamèdi!	Traveller! Thou who sinkest below the western horizon!
(One girl)	*Baō boō tsèla ka ba gagō*	Those who travel are thine,
	Mosipidi! Mokotlamèdi!	Thou traveller! Thou who sinkest below the western horizon!
(Men, all)	*Ka re nna ka re molala a tladi*	I say, this I say, the milky way
	Ga u o bōnè, he!	Don't you see it, oh!
	Mosipidi! Mokotlamèdi!	Thou traveller! Thou who disappearest below the western horizon!
(One girl)	*A ga u utlwè ñwana a lailwè, he!*	Oh, dost thou not hear the child who is instructed!
	Mosipidi! Mokotlamèdi!	Thou traveller! Thou who disappearest below the western horizon!

After the week of the *maitisho a dialogane motlhapudi* is over, the youths go to their own homes, for the initiation of the first degree is now complete. They will receive presents from their fathers and will be taken long distances to friends who are likely to prove generous to them; and for months to come they will strut about in the full glory of their new-found manhood and in the finest clothes they can procure. They are called *boshōtlwane* at this period, and *boshōtlwane* seems to mean, Those who have moulted and put on their spring plumage. The gifts which they receive at this period are called *maalosho*, and the giver might say to the young man *Kea gu alosa*. It is the causative form of the same verb that we found in the name *Dialogane*, the returners.

After this they will go to the cattle-posts or wherever they have work to do. They are under the obligation of chastity for four years, or until they initiate the next regiment of neophytes; and the beestings of cows that have calved will everywhere be offered them. For beestings may be drunk only by lads and girls who are virgins or by the *dialogane* who are faithful to their obligation of chastity. If others should drink the beestings the calf will swell at the knees and probably

die, and there is danger that the cow will lose its next calf. But if the *dialoyane* drink the beestings, both cow and calf are safe.

When I began this paper I hoped to deal with all the initiation ceremonies for boys and girls. But it has been impossible to do more than describe briefly the initiation for boys of the first degree. The rest must remain over for the present.

(The following is a translation in Latin of the Bogwera song mentioned on p. 242 :—

Vaginula, vaginula,
Vaginula porrige cornu ;
Ictus para et tu ipsa !
Copiae penis
Instare nuntiantur.

I have translated *phisana* as the diminutive of *phise* ; it is certainly that in form, but both these words are so old that they are not now in use, except in the Bogwera songs. It should be mentioned that in Secwana the feminine is often expressed by changing the word into the diminutive form ; this is seen notably in the names of the colours of animals : I am not at all certain that *phise* is not masculine. The word *polo* is used of oxen only in common speech and as a curse-word when applied to persons.)

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.[1]

By C. G. Seligmann, M.D.

[With Plates XVI–XXIII.]

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In this paper I have endeavoured to bring together the information which, in the present state of our knowledge, seems to me to bear in such a manner upon the classification of the tribes and peoples of British New Guinea (officially termed Papua) as to be of assistance in differentiating them into groups larger than tribes. Although the basis of this classification is, and must be, physical, I have not hesitated to make use of evidence derived from the cultural side, but in using this class of evidence I have somewhat generalised, and have smoothed over rather than accentuated trifling differences between tribes belonging to the same ethnic group.

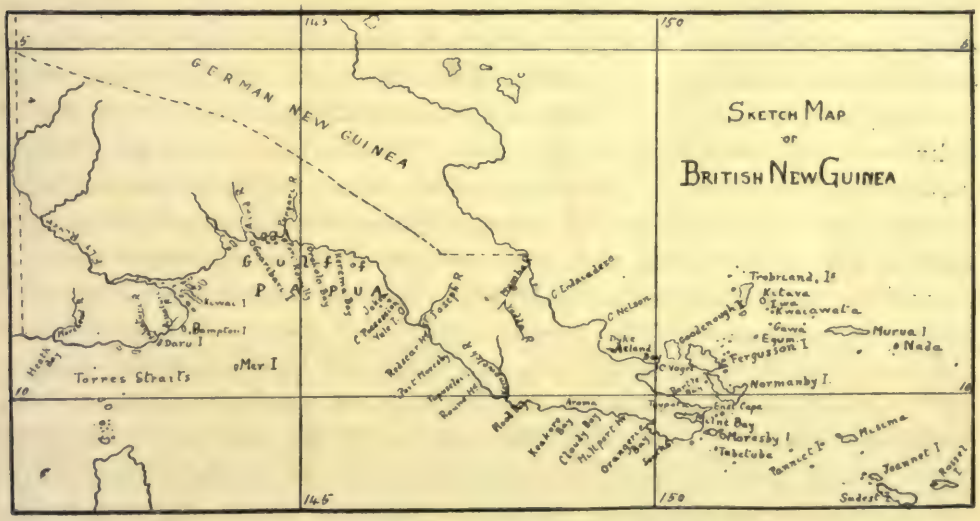
In New Guinea, where a different dialect, or perhaps even language, may be found every twenty or thirty miles, and where neighbouring tribes possessing identical physical characteristics, and having many cultural features in common, may yet present strange divergences, such as completely different languages, it is necessary to find some general collective term to apply to a series of similar tribes who vary only in particular cultural characteristics. To such a collection I apply the term "ethnic group." At present it is often impossible to segregate and define ethnic groups, the existence of which may be suspected, and it may be convenient to unite temporarily two or more ill-defined ethnic groups on account of their substantial agreement in important physical or cultural characteristics, *e.g.*, we may admit that, when we know more of the people whom we call the Massim we shall be able to define among them a larger number of ethnic groups than is at present possible. To such large groups the term "stock" or "congeries" may be applied, and where, as is often the case, a group or stock occupies a well-defined geographical area it may be connoted by the name of this

[1] In this paper only two of the great divisions into which the natives of British New Guinea fall are considered. It is hoped that the third division may be discussed on a future occasion.

area, thus until our knowledge is substantially increased it is convenient to speak of the Massim stock or congeries and the Namau ethnic group.

Further, since the tribes of British New Guinea are usually small, and several may be contained in a single ethnic group, I have not hesitated when convenient to call an ethnic group by the name of one of its constituent tribes, *e.g.*, the Sanana group.

With regard to the sources from which I have drawn the physical and cultural evidence made use of in this paper, the greater part of the former is derived from series of measurements which I made in British New Guinea during 1898 and 1904, which I have already used in the Hunterian Lectures (1906) on "The Physical Anthropology and Ethnology of British New Guinea," of which a substantial abstract appeared in the *Lancet* for March of that year. I have also made use of the measurements taken in New Guinea in 1898 by Dr. A. C. Haddon and of a number of measurements sent to me by Dr. W. M. Strong. The measurements taken by these gentlemen have not yet been published, and I am particularly indebted to them for allowing me to use them, and thus to some extent to anticipate their results.[1]


SKETCH MAP
OF
BRITISH NEW GUINEA
GERMAN NEW GUINEA
Torres Straits
Mer I
Daru I
Kiwai I
Trobriand Is
Kitava
Kwaiawata
Gawa
Egum I
Ferguson I
Murua I
Nada
Normanby I.
Moresby I
Tabetabe
Yoonnet I
Rogeri I
Sudest I
Aroma
Cape Nelson
Cape Vogel
Hall Sound
Milne Bay
Orangerie Bay
Hood Bay
Hall Sound
Teste Bay
Table Island
Goodenough I
Dufaure I
Basilaki I
Panaeati I
Mutuna
Joseph R
Williams R
Lieutenant R
Pasfield Inlet
Port Moresby
Round Hill
Kerepuna
Kaipuna
Kaile
Hanuabada
Hula
Kerema Bay
Yule I
Bampton I
Kiwai I
Saibai I
Boigu I
Mt Ernest
Mt Albert Edward
Mt Victoria
Mt Owen Stanley
Mt Obree
Mt Suckling
Mt Musgrave
Mt Knutsford
Mt Hercules
Mt Yule
Mt Maguire
Mt Scratchley
Mt Simpson
Mt Dayman
Mt Brumer
Mt Riley
Mt Astrolabe
Mt Victoria
Mt Albert Edward
Mt Ernest

all, my thanks are due to Captain F. R. Barton, C.M.G., until lately Administrator of the Possession, not only for an immense amount of unpublished information concerning New Guinea, but also for allowing me the free use of his photographs without which I should scarcely have dared to publish this paper. I am also very greatly indebted to Dr. A. C. Haddon and Dr. H. O. Forbes for placing their collection of photographs at my disposal. On the cultural side my chief authorities have been Captain Barton, the Rev. Father Egidi, and Mr. E. L. Giblin, all of whom have allowed me to make free use of their knowledge and experience, and have taken a great deal of trouble to obtain information for me. With regard to published matter dealing with the cultural conditions prevalent in British New Guinea, I have found Dr. Haddon's publications[1] most valuable, while there is a great deal of useful information to be found in the Annual Reports on British New Guinea.

I may now refer briefly to the importance to be attached to cultural evidence, with which I include linguistics, when endeavouring to approximate or separate groups which present notable points of physical resemblance. I believe that cultural evidence is of great value, especially where one of the groups to be differentiated is presumably immigrant or is believed to be of mixed origin. An actual example will make this clear. There is considerable likeness between the Marshall Bennet Islanders and the Motu of Port Moresby. Both are predominantly mesaticephalic, both are rather short, and in both a comparatively large number of individuals occur with curly or wavy hair. The skin of both people presents various shades of *café-au-lait*, while linguistically both speak Melanesian languages. Probably were our knowledge of these peoples physical only they would be grouped together, but on considering their social and cultural characteristics we find little similarity. In arts and crafts the Marshall Bennet Islanders agree with other islands and communities of the Massim, socially they present the same system of totemism found elsewhere in this area, and differ only in the possession of chiefs who exercise considerable authority. But the arts and crafts of the Motu are in no way closely related to those of the Marshall Bennet Islanders, while socially the clan system of the Motu bears no resemblance whatever to the mother-right of the Marshall Bennets with its characteristic Massim system of linked totems. These differences in social and cultural characters are so striking that, in spite of physical resemblance, they may be considered reasons for completely separating

[1] I would especially refer to *Studies in the Anthropogeography of British New Guinea* which appeared in the *Geographical Journal* for 1900. This paper was originally projected on a larger scale by its author, who intended it to include a systematic study of the cephalic index and stature of the inhabitants of British New Guinea. Dr. Haddon has most generously allowed me to make use of the notes he prepared for this paper, and more than once has discussed the whole matter with me, so that although I have not knowingly adopted any of his ideas without acknowledging them it is certain that I owe more to his assistance than the acknowledgments I make in the text imply. It must not, however, be assumed that Dr. Haddon shares the responsibility for views I put forward in this paper; quotations taken directly from Dr. Haddon's notes will be recognised by standing between quotation marks without indication of their origin in any publication.

these two peoples. And since, broadly speaking, the culture of the Motu is characteristic of a large number of tribes and that of the Marshall Bennets of the whole Massim area the instance under consideration justifies us in differentiating physically similar congeries on cultural evidence only. In the present instance we can, however, go further and indicate, with a high degree of probability, the origin of the foreign strain responsible for the occurrence of brachycephaly and curly or wavy hair in this part of the Massim area. It is now generally agreed that the Polynesians originally inhabited lands to the west of their present domain, and that their earlier home was in some part of Indonesia, and whatever be our views of the exact route pursued by the Polynesians or the expediency of deriving them from any particular point in Indonesia, there can be no reasonable doubt that one line of their advance eastwards lay north of New Guinea and included certain outlying islands of the Solomons, such as Rennell Island, the population of which is Polynesian.[1]

Similar Polynesian islands occur in the New Hebrides, but with these we are not immediately concerned, and Guppy has noted a straight-haired element in both the western and eastern Solomons.[2] From these facts alone it would be legitimate to infer that the foreign element responsible for the curly-haired brachycephalic element in the Marshall Bennets, Trobriands, Murua and the neighbouring islands of the Massim area is due to Polynesian influence.[3] This point of view is immensely strengthened by the recent discovery of a number of stone objects on the northern coast of New Guinea and some of the neighbouring islands which are unlike anything made by any New Guinea people at the present day. These objects, which have been described by Seligmann and Joyce,[4] de Vis,[5] and Barton[6] have for the most part been found at some depth below the surface, but some of them, consisting of well-shaped stone pestles, are in use among the Cape Nelson tribes as charms.[7]

[1] I hope to return to this subject elsewhere, meanwhile I will only point out the importance from this point of view of Maty Island (in long. 142° 47′ E., only 100 miles from New Guinea and less than two degrees south of the line), inhabited by a non-Melanesian population.

[2] I am aware that in particular instances Polynesian colonies have reached Melanesia within the last few generations. Thus Dr. Keane records that in the Loyalty Islands there is "a mixture of [the] two races, and in Uea especially there is a regular colony of Polynesians who are said to have come from Wallis Island not more than two generations back." *Stanford's Compendium of Geography and Travel* (1879), *Australasia*, p. 484. I do not think that the considerable Polynesian influence that is found in some parts of Melanesia is due to such recent and limited migrations as the instance referred to by Dr. Keane, who believes that the presence of colonies of Polynesians in Melanesia is to be explained by a late westerly drift from that part of Oceania now inhabited by Polynesians. ("On the relations of the Indo-Chinese and Inter-Oceanic Races and Languages," *Journ. Anthrop. Inst.*, ix, 1880.)

[3] I do not wish to suggest that there is anything new in the idea that Polynesian influence is to be detected in this part of Melanesia, but I am not aware that it has been deliberately stated to have influenced these islands before (otherwise than as the result of a westerly drift), or that the facts indicating such influence have been set forth.

[4] "Prehistoric Objects in British New Guinea," in *Anthropological Essays presented to Edward Burnett Tylor*, 1907.

[5] *Annals of the Queensland Museum*, No. LVII, 1907, p. 12.

[6] "New Guinea Stone Pestles," *Man*, 1908, 1.

[7] Barton, *loc. cit.*

It has long been recognised that the inhabitants of New Guinea belong to more than one race, indeed, the difference between the relatively tall, dark-skinned, frizzly-haired inhabitants of Torres Straits, the Fly River and the neighbouring parts of New Guinea on the one hand, and the smaller, lighter coloured peoples of that part of the coast line stretching east of Cape Possession to the archipelagos of the eastern extremity of the Possession, is sufficiently striking to have been commented on by travellers. Speaking of the inhabitants of Redscar Bay, Moresby says:—"We were surprised to see that these people differed totally from the tall, muscular, fierce-looking, naked black Papuans we had left in Torres Straits. These men were more of the Malay type—small, lithe, copper-coloured people, with clean well-cut features, and a pleasing expression of countenance. They wore their own hair, frizzled out mop-fashion, and were slightly tattooed with stars and small figures on the breast and shoulders, as I have never seen the black Papuans."[1]

Although colour and size are, generally speaking, the most obvious characters differentiating the peoples of the southern coast of British New Guinea, living respectively east and west of Cape Possession, there are certain other racial characteristics to which it is necessary to allude, but before doing this the nomenclature to be adopted must be defined. The term Papuan which has hitherto been used to describe the inhabitants of New Guinea generally is unsuitable for this purpose, since even in British New Guinea there are groups of people so little alike that they must be considered to be racially distinct. This was first pointed out by Dr. Haddon, who recognised "a Melanesian migration into New Guinea," and further, "that a single wandering would not account for certain puzzling facts."[2] If a word equivalent to an inhabitant of New Guinea be required the term Papuasian may be employed; in any case the term "Papuan," unless qualified, should be limited to the, geographically, more western Papuasians, a congeries of frizzly-haired and often mop-headed peoples, whose skin colour is some shade of brownish black. The eastern Papuasians—that is, the generally smaller, lighter coloured, frizzly-haired races of the eastern New Guinea Archipelagos and the eastern peninsula of New Guinea—now require a name, and since the true Melanesian element is dominant in them, they may be called Papuo-Melanesians.

This terminology somewhat resembles that suggested by Dr. A. H. Keane (*Ethnology*, 1901, pp. 281 *et seq.*) which he elaborated in *Man Past and Present* (p. 130) as follows:—"Owing to their linguistic, geographical, and to some extent their social and physical differences, it is desirable to treat the Papuans and Melanesians as two distinct though closely related sub-groups, and to restrict the use of the terms Papuan and Melanesian accordingly, while both may be conveniently comprised under the general or collective term Papuasian. Here, therefore, by *Papuans* will be understood the true aborigines of New Guinea with its eastern Louisiade dependency, and in the west many of the Malaysian islands

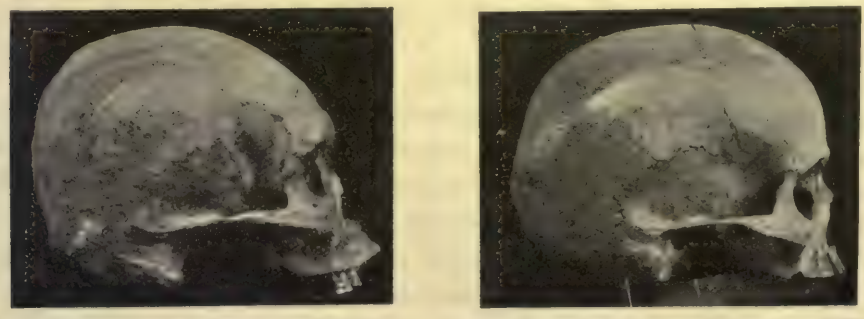
[1] *Discoveries in New Guinea*, p. 139.

[2] *The Decorative Art of British New Guinea*, 1894, p. 267.

as far as Flores inclusive, where the black element and Malay speech predominate; by Melanesians, the natives of Melanesia as commonly understood, that is, the 'Bismarck' Archipelago (New Britain, New Ireland, and Duke of York); the Solomon Islands; Santa Cruz; the Hebrides, New Caledonia, Loyalty and Fiji, where the black element and Malayo-Polynesian speech prevail almost exclusively. Papuasia will thus comprise the insular world from Flores to New Caledonia, forming geographically a northern and north-eastern extension of the Australian Continent."

It will be seen that my use of the term Papuasian differs from Dr. Keane's; on the other hand it will be obvious that the term Papuan is used in the same sense directly it is sufficiently realised that men constituting "the black element" and using a "non-Malay speech" do not occur, as far as we at present know, in the eastern archipelagos of New Guinea or indeed on the eastern portion of the mainland.

Physically the Papuan is usually taller, and more consistently dolichocephalic than the Papuo-Melanesian; he is always darker, his usual colour being a shade of dark brown; his head is high and his face is, as a rule, long, with prominent brow-ridges, above which his rather flat forehead usually slopes backwards. The Papuo-Melanesian head is usually less high and the brow ridges less prominent, while the forehead is commonly rounded and not retreating. The difference in cranial form is well seen in the two skulls reproduced in Fig. 1, which shows that the Papuan skull is more massive than the Papuo-Melanesian, with stronger processes and more marked muscular impressions. The Papuan nose is longer and stouter, and is often so arched as to present the outline known as "Jewish." The character of its bridge varies, but typically the nostrils are broad and the tip of the nose is often hooked downwards. In the Papuo-Melanesian the nose is, as a rule, smaller, and the truly Papuan type of hooked nose does not, as far as my observations extend, occur.



SKULL FROM ERUB (R.C.S. NO. 1195B). SKULL FROM NUAKATA (R.C.S. NO. 1177).

FIG. 2.

Fig. 2 shows two skulls in the Museum of the Royal College of Surgeons, and illustrates some of the cranial differences between Papuans and Papuo-Melanesians. The Papuan skull, No. 1195B of the Royal College of Surgeons Collection, is that of a man of Erub, one of the eastern islands of Torres Straits; while the Papuo-

Melanesian skull No. 1177 is that of a Massim from Nuakata (Lydia Island), in the neighbourhood of East Cape.

Both Papuans and Papuo-Melanesians have frizzly hair, but while this is universal among Papuans, curly and even wavy hair occurs among all Papuo-Melanesians with whom we are acquainted. Such hair is especially common among the people of the Nara district, occurring especially among women, in whom the wavy quality may be so slight that the hair appears almost straight.

Plate XVII, Fig. 1, is a photograph taken by Captain Barton of a Nara man, and during a short visit to Nara I was able to satisfy myself that the condition shown in this photograph was by no means unusual.[1] Again, although hair as straight as this scarcely occurs elsewhere in that portion of the Possession with which I am acquainted, Captain Barton informs me that curly and wavy hair is common in Aroma villages some 80 miles to the east of Port Moresby. This agrees well with my own slight knowledge of these natives, derived from the crews of trading canoes I have met.

All Papuo-Melanesians speak languages of the Melanesian type which are divisible into groups, the constituent languages of each of which contain numbers of common words, all related to the stock language of Oceania. With the Papuan languages it is otherwise, *qua* vocabulary they present a number of apparently unrelated stock languages, while of their grammar it can only be said that though a number of them conform to certain rules it is clear that the grammar of none of them presents Melanesian characters.[2] A great difference is also present in the system of enumeration of the two races. While the Papuo-Melanesian counts easily by the quinary, decimal or vigesimal system, the Papuan has only two numerals, one and two, and counts with certainty only up to five or six by combining these.

Before considering the various ethnic groups into which the Papuans are divided, I must point out the geographical distribution of the Papuo-Melanesians and show to what extent they have been modified by contact with the Papuans.

Ignoring Rossel Island at the eastern extremity of the Louisiade Archipelago on account of our very slight knowledge thereof, we find that tribes presenting physical and cultural characteristics differing from those of the Papuans are found throughout the archipelagos of the east and along the south coast as far west as Cape Possession. On the north coast they extend as far west as the neighbourhood of Cape Nelson. Although it is impossible to state their distribution inland, the records of exploration, and especially the recent journeys of Captain F. R. Barton and Mr. C. A. W. Monckton which I have had the opportunity of discussing with these gentlemen, suggest that they do not reach further west than the 146th parallel of longitude, while it may be that the 147th parallel more nearly marks their limits. Further, since it is certain that the greater part of the courses of the

[1] A profile photograph of a Nara woman with almost straight hair will be found on p. 233 of the *Geographical Journal* for 1906.

[2] For this information I am indebted to Mr. S. H. Ray.

northern rivers, the Gira, Mamba, Opi, Kumusi, and Musa, run through country inhabited by Papuans, the majority, if not all, the country north of the main range and west of the 149th parallel lies outside the greatest possible extent of the Melanesian area. For reasons which will presently be clear it will be convenient, and broadly speaking true, to consider the whole of the area not inhabited by typical Papuans as Melanesian, though, as will be shown later, a great part of this area is inhabited by tribes who speak non-Melanesian languages, in many of whom there is every reason to believe there is a considerable infusion of Papuan blood.[1] Accepting this large area as Melanesian the slightest acquaintance with its manufactures, decorative art or social systems at once suggests a twofold origin for its inhabitants. There have in fact been two great invasions of Papuo-Melanesians into New Guinea, that of the Massim[2] and that of the other Papuo-Melanesian people, who because they are found to the west of the Massim may be termed the Western Papuo-Melanesians.



FIG. 3.—SKETCH MAP SHOWING DISTRIBUTION OF PAPUANS AND PAPUO-MELANESIANS.

Plate XVI is a photograph of two men of Port Moresby. One of these men presents those qualities of build and feature which I regard as typical of one great division of the Papuo-Melanesians, the other, a somewhat taller man, seems to me to present certain Papuan features, a longer, narrower face, a more beak-like nose and stronger limbs, which contrast with the softer, rounder, and less harsh features of the immigrant Melanesians.

[1] These "tribes who speak non-Melanesian languages and in whom there is a . . . . considerable infusion of Papuan blood" include those who in the *Lancet* abstract are called Eastern Papuans, a name which I now regard as unsuitable.

[2] The area inhabited by the Massim corresponds closely with that defined as Massim by Dr. A. C. Haddon, who extends E. T. Hamy's term to include the coastal inhabitants of the mainland and the island groups east of the 150th parallel of longitude, *cf. The Decorative Art of British New Guinea*, p. 184, where reference is made to Hamy's history of the term given in his paper, "Étude sur les Papouas de la Mer D'Entercasteaux." *Rev. d'Ethnogr.*, t. vii, 1888, pp. 503–519.

Port Moresby is situated so far east of Cape Possession, the present coastal limit of the Papuan tribes, that recent contact metamorphosis can safely be excluded, and we thus reach the conclusion that the immigrant Melanesians are superposed upon a former Papuan population. Once this idea is formulated a large number of facts appear to support it. Thus the physical difference between the two men shown in Plate XVI, and living at Port Moresby sixty miles east of Cape Possession, can equally be found among the Sinaugolo occupying the grassy uplands inland from the coast sixty miles east of Port Moresby, while the people, who speak a Melanesian language, scarcely differ in physical and cultural characteristics from the Garia, their neighbours, with whom they have long lived on the most friendly terms, but who speak a Papuan language. Again, many of the tribes who must be classed as immigrant Melanesians say that they have come from the east, while the Koita, a tribe of Papuo-Melanesians who speak a Papuan language, though they do not agree to this, state that their oldest songs which they no longer understand came to them from the east.

It appears then that there is every reason to believe that the Melanesian immigrants came from the east, and that arriving upon the coast they formed settlements and gradually drove out or assimilated a pre-existing Papuan population. It is not necessary to believe that this population (which may well have represented early and but incompletely differentiated types of the Oceanic negro or Proto-Papuan) was everywhere homogeneous or presented a solid front to the invaders; indeed the great differences existing between tribes, all of which, in the present state of our knowledge, we must class as Papuan, suggest that the Proto-Papuans presented no widely spread homogeneous type. Nor need we believe that New Guinea was densely populated in those early days, since even at the present time habitable islands perfectly capable of sustaining a trading population are uninhabited or have but recently become inhabited. The invaders would be desperate men, possessed of superior sea-going craft, and therefore of superior mobility, holding the command of the sea and so able to raid the coasts as they pleased.[1]

In this connection it is not without significance that, on the southern coast of British New Guinea, the territory of the immigrant Melanesian tribes is limited to that part of the coast marked by the absence of the deltas of big rivers and the

[1] The *waga*, the large built up canoes of the south-eastern extremity of British New Guinea and the neighbouring archipelagos, are the finest sea-going craft in the Possession, while the sailing outrigger canoes of the Melanesian tribes of the Central Division, and their large sea-going rafts (*lakatoi*), are vastly superior to the unstable dug-outs of the Papuan tribes of the Papuan Gulf propelled by paddles and lacking both sails and outriggers. This does not, however, take into consideration the excellently built canoes with double outriggers which occur further west at the mouth of the Fly River; it must, however, be remembered that proceeding west these canoes speedily give place to the paddled dug-out with no outrigger (Moorhead and Bensbach Rivers), and that there is a curious and unexplained round-headed element in the population at the mouth of the Fly River (*cf.* p. 262). This brachycephaly appears to be even more marked at the mouth of the Aird River, somewhat to the east of the Fly River (*cf.* p. 258).

huge mangrove swamps that are associated with them, that is to say, the immigrants were only able to establish themselves in comparatively open country that did not offer the facilities for resistance and evasion on the part of the aborigines that a mangrove swamp undoubtedly possesses. The only fact which it seems must have been greatly against the process of invasion and assimilation as here sketched out is that the Papuan tribes of the southern coast of British New Guinea may have possessed bows and arrows, which would apparently render them extremely dangerous opponents to peoples armed with no missile weapons, except perhaps slings, arriving in comparatively small numbers in canoes.

As was first pointed out by Dr. Haddon,[1] two main divisions of the people whom I call Papuo-Melanesians must be distinguished; these, besides differing from each other in physical characteristics, differ culturally in many matters, though agreeing together in the general absence of long and rigid seclusion ceremonies for boys at puberty, which, in British New Guinea, seems a Papuan characteristic, and is certainly found among the Papuan tribes from Cape Possession to the Netherlands boundary. One of these great divisions of the Melanesians may conveniently be styled the Massim. The other division, which may be spoken of as the western immigrant division or the western Papuo-Melanesians, extends from Cape Possession eastwards at least to Aroma, and its influence may perhaps reach nearly as far as the western side of Mullins harbour. It is difficult to summarise the physical and cultural peculiarities of the peoples of this division, though they may be defined to some extent by the absence of certain peculiarities almost always present among the Massim. It may, however, be noted that in nearly every tribe there are men whose physiognomy approaches the Papuan type, as is the case in one of the men shown in Plate XVI. By this quality this division seems to be differentiated from the Massim who, as far as my experience goes, do not present this appearance.

PAPUANS.

It will be convenient to begin our discussion of the western Papuasians, or Papuans proper, with the peoples of the Papuan Gulf, of whom the Namau group will be first considered.

The Papuan Gulf lies to the west of Cape Possession, and "Gulf District" is the usually recognised term for the greater part of the shore. In a strict geographical sense it would seem that the eastern shore of the Fly River should form the western boundary of the Gulf. But custom and convenience are both against this use, the vast delta of the Fly has always been considered as a separate province, and it becomes necessary to fix some more or less arbitrary western boundary to the Gulf District. It is obviously convenient that this boundary, since it is geographically unreal, should, as far as possible, mark the eastward limit of the culture characteristic of the Fly District, and in the present state of

[1] *Decorative Art, loc. cit.*, and again in *Studies, etc.*, pp. 417 and 437.

our knowledge a line drawn somewhat to the west of the Bamu River would appear to fulfil this condition. Remembering then that the western limit of the Gulf District is geographically unreal and may later prove to be ethnographically unsound, the Gulf, when spoken of in this paper, will be held to include the coast line stretching from Cape Possession (Waimatuma) in the east to the western side of the Bamu estuary in the west. So defined the mouth of the Purari River forms roughly the centre of the Gulf District, and since the Koriki tribes, the most homogeneous Gulf people with whom we are yet acquainted, cluster round the mouth of the Purari, it becomes convenient to take the neighbourhood of this river as a starting point in describing the Gulf population.

THE NAMAU GROUP.

The district round the mouth of the Purari has been called "Namau," and this term, though geographical in origin and connoting an area with no accurately defined western boundary, may conveniently be applied to the Purari tribes, since they and the land they inhabit are alike known by this name to the Motu of Port Moresby, who visit some of their villages to obtain sago. The Namau, of whom the Koriki and Iari are the best known tribes, form one of the most homogeneous groups in British New Guinea. Owing to their cannibalistic habits, their inveterate head-hunting propensities, and the fact that they carefully prepared the skulls of their enemies, many of their skulls have come to Europe and many museums possess specimens which have been carefully measured and described.[1] But until recently it has not been clear from which part of New Guinea the skulls referred to were derived, though the community of style and often the identity of the designs incised or scratched on the frontal bone made it obvious that all these skulls belonged to one group.[2] Fig. 4 represents a male skull of this group; the pattern, which consists of a single band across the frontal bone, does not show. Fig. 5 is another of these skulls, the face of



FIG. 4.—SKULL FROM THE PURARI RIVER.

[1] Mention need only be made of the papers by Sir W. Turner, "Decorated and Sculptured Skulls from New Guinea," *Proceedings of the Royal Society of Edinburgh*, vol. xxii; and of Dr. George A. Dorsey, "Observations on a Collection of Papuan Crania," *Field Columbia Museum Publications, Anthrop. Series*, vol. ii.

[2] I am indebted to the Rev. J. H. Holmes for the following information concerning the origin and purpose of the patterns carved on the skulls. A man who kills an enemy receives the latter's skull at the cannibal feast at which the body is eaten; he keeps the skull until he becomes too old or infirm to join in further warfare; when this time arrives he and other old men of his generation carve the skulls, which they have meanwhile kept in their club-house, each individual carving that design on the forehead of his skulls which is peculiar to his own

which has been modelled in resin (?), a seed being inserted in the mass of resin which fills each orbit to represent the pupil of the eye; the teeth, which are not visible in the figure, are formed by shells. As far as I can discover, the practice of moulding a face on the skulls is not common, but two out of a dozen skulls given me by the Rev. J. Holmes have been treated in this way. The majority of the skulls have been prepared in the manner shown in Fig. 4, the places of missing teeth being supplied by small pegs of wood. The skulls of the people of this group are strongly dolichocephalic, the average for Dr. Dorsey's specimens being 72, while that of the series in the museum of the Royal College of Surgeons is reduced to 68 by the presence of one skull with the especially low index of 62·6. All these skulls are prognathous, micro- or mesaticephalic and mesorhine. Dr. W. M. Strong, who measured twenty-two men, found their average height to be just under 1·600 m. (63 inches), their average cephalic index 72 (maximum 77, minimum 68), and their average nasal index 83. Their hair was invariably frizzly and their skin rather dark. Plate XVII, Fig. 2, shows a small group of Purari River men.



FIG. 5.—SKULL FROM PURARI RIVER WITH FACE MODELLED IN RESIN.

The Goaribari Group.

The deltas of a number of big rivers and smaller streams constitute an area of mud and swamp extending for many miles to the west of the mouths of the Purari. The chief of these rivers are the Kapaina, the Kikori, the Omate (Aird River), the Turama and the Bamu, and for convenience this area may be called provisionally the Riverine portion of the Gulf. Of the inhabitants of this area but little is known, and that little is limited to the natives of the Aird River delta and the country west of it. The slightly known culture of the Riverine area presents

family, or more probably clan. This carving is generally done while the younger men of the tribe are away on the war-path; if when they return it is found that they have been successful the skulls are put away, but if success has not attended them, then the old men make it known by a chanting and a beating of drums that they are about to make a presentation of skulls to the young warriors. The latter at once set to work to prepare a feast for the old men. At a given stage in the feast the old men present the skulls to the warriors, assuring them that in future they will be braver and consequently more successful than formerly, as they will have to help them the bravery of the individual whose skull they now receive. It is alleged that a similar custom is observed by the non-cannibal Elema tribes to the east of the Purari, but here, for the human skull is substituted the skull, lower jaw, or tusk of the wild boar. Mr. Holmes sent me this information some time before writing his paper "Notes on the Religious Ideas of the Elema Tribe of the Papuan Gulf" (*Journ. Anthrop. Inst.*, 1902), in which he says: "The wild boar's tusk, the acquisition of which is greatly desired as a mark of bravery, is not so much coveted as a personal adornment, as for the courage, ferocity, and daring which it is supposed to contain and to be capable of imparting to anyone who secures it."

affinities both with that of the Fly River and the Namau tribes of the Papuan Gulf. On the physical side all that is known is that on the island of Goaribari at the mouth of the Aird River there exists a highly brachycephalic population which perhaps extends to the Turama River. In the absence of any knowledge of the tribal names of these brachycephals we may provisionally distinguish the group to which they belong as the Goaribari group. The cephalic index of five Goaribari men gave the high average of 87, while six skulls from the Aird River delta gave an average of just over 80, and varied only between 80 and 81·5. The average height of the five Goaribari men was 1·611 m., or about 63½ inches. Plate XVII, Fig. 3, represents a group of these natives. Passing westwards it appears that the brachycephalic element is also present at the mouth of the Bamu River, for Mr. R. H. Spittal[1] describes a skull with a cranial index of 87·6. On the other hand, the cephalic indices of eight men measured by Dr. Strong varied from 72 to 78, with an average index of 76, and one of Mr. Spittal's skulls has a cranial index of only 70·5.

The Elema Group.

That portion of the Gulf east of the Purari delta is, as a whole, characterised by the taller stature of its inhabitants and their higher cephalic index. This area includes the peoples of Orokolo, Toaripi, Jokea and Lese. Probably these belong essentially to one group and may be classed together under the name Elema, the term by which they and their country are known to the Motu.[2] The average cephalic index of a number of Elema natives from the above mentioned villages is 77, while their average height varies from 1·667 m. (65¾ inches) for Jokea and Lese at the eastern extremity of the Gulf to 1·702 m. (67 inches) for Toaripi. Twelve Orokolo men measured by the Rev. J. Holmes gave an

[1] "Observations on Fourteen New Guinea Skulls," *Proceedings of the Anatomical and Anthropological Society of the University of Aberdeen*, 1904–1906.

[2] The Rev. J. Holmes, "Notes on the Elema Tribes of the Papuan Gulf," *Journ. Anthrop. Inst.*, states that "The name 'Elema' is probably a Motuan rendering of the name 'Hereva,' the name of one of the villages of the Moreaipi group, or it may be an adaptation of the name of a great chief, 'Hereva-ape,' who long ago ruled the Moreaipi tribe with a firm hand." Mr. Holmes divides the Elema tribes into two great groups. "Those tribes whose tribal names end in 'ipi' form one group; the other group includes all those tribes whose tribal names end in 'ra,' 'u,' 'au.' Of the former, or 'ipi' group, there are six tribes, all living on the c a t observingthe same customs and claiming a common ancestry. Of the latter, the 'a,' 'u,' 'au,' and 'ra' group, the 'ra' and 'u' tribes are represented by one tribe of each on the coast of Elema, and two 'au' tribes in the immediate vicinity of the coast of this district."

The tribes of both groups state that they migrated to the coast from inland, and this is confirmed by the results of exploration, for Mr. Holmes has found that though each of the Haura communities "located between the east bank of the Vailala River and the spur of the Albert Range, known as the 'Cupola' . . . is small . . . it is constantly being fed by a chain of villages, probably extending from the coast to the mountain range, at the head of the Vailala River. The writer of this paper has explored the upper waters of the Vailala River, much higher up than any other European has yet reached, and has found representatives of the Haura tribe in the neighbourhood of the German boundary." It does not, however, appear that these two groups of tribes should be dissociated on cultural or physical grounds.

average of 67½ inches and varied from 63 to 71 inches, the latter an unusual height for a Papuan. Broadly speaking, the men of the Elema tribes are the tallest, stoutest and most vigorous of the natives of the south-eastern coast, but in spite of a certain homogeneity in these respects, throughout the district there is considerable variation in special physical characteristics. Thus while the face is usually long as in Plate XVIII, some quite broad faces occur and the character of the nose varies greatly, presenting two well-marked types—(1) broad and short, and (2) long and narrow, though both forms occur in individuals of the same settlement. The nose may be strongly hooked so that the tip actually overhangs the base of the nostrils, though this form of nose may perhaps be intensified by the wearing of nose ornaments, it could scarcely be produced by this, especially in so young a man as the one shown in Plate XVIII, Fig. 2. Unfortunately, I have but few nasal measurements from this area, but in five men the nasal index varied from 70 to 90.[1]

With the exception of the Elema tribes, extraordinarily little is known of the culture of the peoples of the Papuan Gulf. Of the Namau tribes and of those of the Riverine portion of the Gulf we know that their language is distinct from that of the Elema tribes, but that, as among the latter, club-houses and initiation ceremonies are of prime importance. Among the Namau, who are cannibals, the decorated skulls of their victims, together with those of pigs and crocodiles, are kept in their club-houses (perhaps in specially closed compartments of these), in association with religious objects which, as pointed out by Dr. Haddon,[2] are doubtless bull-roarer derivatives (Plate XIX, Fig. 1). At Goaribari, in the Aird delta, bull-roarer derivatives, some of which, though much enlarged, still retain their shape and proportions, are placed on each side of the entrance of certain houses (not obviously club-houses) and the skulls of enemies are said to be attached by long cane loops to the leg-like uprights of certain wooden figures of the kind shown in Fig. 6, which are placed amidst them.



FIG. 6.—WOODEN FIGURE TO WHICH SKULLS ARE ATTACHED (AIRD RIVER DELTA).

The decorative art of the Elema and Namau tribes has much in common; further, Namau art (and therefore, though more remotely, the art of the Elema tribes) has affinities with that of the Aird River delta and perhaps even with that of the Fly. The Elema tribes are not cannibals, they have a well-organised system of chieftainship and club-houses play a most important part in the social fabric. This is based on a clan organisation, embedded in which is the remains of a totemic system, each clan having a number of *ualare*

[1] The nasal index of a male skull said to come from Orokolo is given by Mr. Spittal (*op. cit.*) as 50; this skull has a cranial index of 74·4.

[2] *Decorative Art*, pp. 102, 103.

(totems[1]). Besides this Mr. Holmes has shown that among the Elema tribes reverence is paid to a number of deified ancestors, but so little is known concerning the religious beliefs of the inhabitants of the Papuan Gulf that I give two photographs of gods from the Elema district; the first of which, shown in Plate XIX, Fig. 2, also represents a portion of a club-house at Vailala. That the two figures represent males is obvious from the perineal bandage; some, at least, of the objects in front of the figures may be assumed to be offerings, since they include betel leaves and a coconut, while the shell, the carved belts and weapons may also be offerings. The carved and painted wooden oval attached to the post is of particular interest, since, although it has long been known that these bull-roarer derivatives were associated with the religious beliefs of the Namau and Elema tribes, the photograph shows that the conventionalised human forms carved and painted on these are adaptations of the wooden figures of the gods, the circular "ornament" pendant from the chin of the face carved on the bull-roarer derivative representing the umbilicus of the god, while it may be suggested that the group of chevrons so common along the sides of these bull-roarer derivatives represent the legs and arms of the figure of the god. With the figures shown in this photograph we may compare the figure of a goddess Ukaipu (Plate XIX, Fig. 3), from Orokolo, now in the Horniman Museum, for a print of which I am indebted to the courtesy of Dr. H. S. Harrison, who has also given me the following information collected by a Rarotongan teacher of the London Mission Society. Ivo and Ukaipu were the ancestors of the family of Apoveo who is the chief of Orokolo. Ivo was the name of the first man of that family and his name signifies this, viz.: The earth around the stem of the Wild Ginger Plant. Ivo grew up out of the earth around the stem of the plant called Hoa by the people of Orokolo. When he came up out of the Earth he sat all day by the stem of the Wild Ginger Plant, and spoke to himself saying, "The Earth is my Parent, and the shoots of this Wild Ginger Plant are my relations." He was alone for a long time; and he had no pleasure in his loneliness. Then he said, "Lo, my parent the Earth will cause a wife for me to grow up out of the stem of this Wild Ginger Plant." When he slept that night he knew that the stem of the

[1] "A native's explanation why a certain mammal, bird or fish is regarded sacred by him as his particular *ualare* is, that this animal was regarded as sacred by his original ancestor. . . For the present we have to be content with the statement that a certain animal was regarded as sacred by the original ancestor; he never injured or killed it, never ate it as food when killed by anyone else, and because it was held sacred by him, his posterity for all time must also regard it as sacred."

"If a man accidentally kills a member of the family of his *ualare*, he sets aside a period for mourning, during which period he fasts from the principal kind of food, eating only enough to keep himself from absolute starvation; he also observes many of the customs of mourning as if he had lost a relative. If on the other hand he kills a member of his *ualare* family in a fit of anger or for any other reason that is not justifiable, as soon as he recognises what he has done he gives himself over to violent grief, abstains from all kinds of food, isolates himself from hi relatives, and ultimately dies of starvation." "Notes on the Religious Ideas of the Elema Tribe of the Papuan Gulf," *Journ. Anthrop. Inst.*, vol. xxxii, 1902.

Wild Ginger Plant had become a wife for him. He rose up and looked at the stem of the Wild Ginger Plant, but there was no wife there for him. Then he slept again, and saw in his sleep, that the stem of the Wild Ginger Plant was a woman—at which he marvelled greatly for the rest of the night and until morning dawned. But when he arose in the morning and looked, the Wild Ginger Plant was there and nothing else. Then Ivo stood by the Wild Ginger Plant and said to his parent the Earth, "Lo, I saw a woman here last night; but this which I took to be a woman is only the stem of the Wild Ginger Plant." At this he was sad and again sought for his wife, and found her in a hole in the Wild Ginger Plant. Then he said to his wife, "You have come out of the stem of the Wild Ginger; my parent the Earth made you for me." Then Ivo called his wife Ukaipu, which means "the life of the serpent, the life of the lizard." Then Ivo and Ukaipu his wife lived together, and the name of their first-born son was Haiapo, and the name of his youngest brother was Leleva. The significance of the name Haiapo is "the God of the Belly," that of the name Leleva, "the Consecrated Feast." The elder brother was a maker of images, and the younger brother carried the feasts to the gods.

The people of Orokolo are descended from these brothers. The first-born son of Leleva was named Apoveo, and his younger brother was named Paha. The name of the eldest son of Paha was Hihiri, and from Hihiri are descended a portion of the people of Vailala. Hihiri had two sons; the elder was named Raveape, and the younger was named Apoveo. Raveape had two sons, the elder was named Peke, and the younger Apoveo, and this man was the chief of Orokolo in 1879.[1]

Passing westwards to the vast delta of the Fly we reach a most puzzling area of which we have not yet sufficient knowledge to allow us to classify its inhabitants. Certain facts are however clear; the first of these is that although there is a strong dolichocephalic element in the inhabitants of the islands of the estuary of the Fly, brachycephals also occur. The second fact which is definitely known is that as far as the coastal population is concerned the cultural peculiarities which distinguish the people of the mouth of the Fly cease somewhat abruptly about the neighbourhood of Strachan Island. The remains of the inhabitants of Strachan Island and the Mai Kussa and Wasi Kussa Rivers with the inhabitants of the Bensbach and Morehead Rivers clearly form a group with common cultural characters which to avoid confusion may be called the Sanana group, Sanana being the name of an extinct or almost extinct tribe on the Upper Morehead. It must be remembered that the whole of this district has been depopulated by Tugeri raiders, whole tribes having been killed out.

[1] Although this legend is but a variant of that given by Mr. Holmes I have quoted it here since it accounts directly for the origin of Orokolo and Vailala, and shows how closely the chiefs of these communities are related to their ancestor-gods.

The Daudai Group.

Daudai, the area of marshland lying between the Fly estuary and the sea, is inhabited by a number of tribes of whose culture we know very little except that some of them, like the natives of the Fly River estuary, live in long houses. Among these tribes are the Masingara, a group of whom, taken by Dr. Haddon about 1888, is shown in Plate XX, Fig. 1. This tribe, the members of which are of moderate height, 1·616 m. (63½ inches), and invariably have frizzly hair, appear to be one of the most homogeneous groups of dolichocephals yet met with in New Guinea, since the cephalic index of 11 males measured by Dr. Strong varies from 68 to 74, with an average of 71. Confirmatory evidence of the predominant dolichocephaly of this group is offered by 14 crania collected by Dr. Haddon in 1888 from Mawatta which he believes "were trophies from the Masingara. The average index of both sexes is 71·2, the range being from 63·9 to 77·1, the median is 70."

Mantegazza and Regalia[1] record two male skulls from the Baduhuberi with indices of 66·1 and 75·8.

D'Albertis states that this is a "bush" tribe to the west of Mawatta which Dr. Haddon equates with the Badu who, according to official information, live 8 miles to the west of Mawatta. Some, if not all, the tribes of this group drink kava, "one man chewing the root for another man."[2]

The Kiwai Group.

The natives of the Fly estuary may provisionally be called the Kiwai group, but it must be understood that we do not know either the eastern or the up-river limit of this group, though passing westwards along the coast it extends at least as far as Mawatta at the mouth of the Binaturi River, and Dr. Haddon has measured a Parama (Bampton Island) "man with an index of 77·2 and a Mawatta man with one of 80."[3] Further, the same authority finds that "Three normal adult skulls from the Oriomo River (to the west of the mouth of the Fly) have the following indices 77·1, 78·7, 78·7, the last being a female." The men of this group are stoutly built and moderately tall, they are of rather an active disposition and were the first men to join the armed Native Constabulary in any numbers. The average stature of 19 men of Kiwai Island measured by Chalmers was 1·656 m. (65¼ inches) with a minimum of 1·581 m. (62¼ inches) and a maximum of 1·731 m., *i.e.*, just over 68 inches. Only two men were below 1·600 m. (63 inches). The average cephalic index of the same 19 men was 83, but this includes one index of 92·1 which should be rejected. Excluding this the indices run from 75·1 to 87·8. These measurements afford ample proof of the existence of the brachycephalic element at the mouth of the Fly, independent evidence of which is furnished by the skulls collected by D'Albertis, who found that the brachycephalic

[1] *Archivio per l'Antrop. e la etnol.*, xi, 1881.
[2] *Decorative Art*, p. 11.
[3] *Studies etc.*, p. 414.

element occurred also on Canoe Island, the upper limit of the Fly delta. Above this—*i.e.*, in the interior of the Fly River district—the 13 male and 7 female skulls which he collected varied from 67·7 to 71·1, but the pickled head brought back by him had a cephalic index of 84.[1]

The brachycephalic element is also found in Torres Straits; it has however but slightly affected the Eastern Islanders (Mer, Erub, etc.), while it is very obvious in the Western Islanders (Mabuiag, Saibai, Badu, etc.). I am indebted to Dr. Haddon for the following unpublished information showing this; 33 Mabuiag and Badu men have an average cephalic index of 81·1 (minimum 74·7), (maximum 86·5). "There is little doubt that the Mabuiag and Badu men are good examples of the Western Islanders of Torres Straits . . . . as the median of the 33 is 81 we may accept that index as final." With regard to the Eastern Islanders the prevalent dolichocephaly is best shown by a series of 21 male crania from Murray Island measured by Dr. Haddon. These give an average of 71·8, with a minimum of 65·4 and a maximum of 77·9.[2]

The Sanana Group.

Plate XX, Fig. 2, for which I am indebted to Mr. Arthur Jewell, shows a group of men of the Toro tribe living on the Bensbach River, which at its mouth forms the boundary between British and Netherlands New Guinea. Besides representatives of the Toro tribe a number of men were seen and measured at Bugi near the mouth of the Mai Kussa River. These people consisted of the remains of a number of tribes from the neighbourhood of Bugi and Strachan Island who had escaped death at the hands of Tugeri raiders from over the Netherlands border. There is a very slight amount of brachycephaly in both the Toro and the remnants of the tribes settled at Bugi; ignoring this the natives settled at Bugi may be said to be predominantly mesaticephalic, the Toro to be dolichocephalic. The latter are considerably taller (1·691 m., *i.e.*, 66½ inches) than the Bugi (1·640 m., *i.e.*, 64½ inches), though the members of both the Bugi and Toro show considerable individual variation in stature and feature. The Toro are spare and moderately tall, with thin legs and often thin bony faces, projecting zygomata and marked supra-orbital ridges. The average cephalic index of 21 men works out at 74, but this is perhaps too high, since it takes into consideration one abnormally high index of 86. Facially the Toro and Bugi seem to vary more than most other New Guinea tribes, some of them closely resembling certain of the less intelligent types of European faces. The hair of all is frizzly; generally speaking the Toro appear long-faced, but broad faces also occur. Their noses are generally long and often coarse, with moderately broad bridges and sometimes with coarse fleshy tips which are not, however, hooked. One of their favourite attitudes is

[1] The crania collected by d'Albertis have been studied by Mantegazza and Regalia, from whose paper these figures are taken.

[2] It will be noted that the skull shown in Fig. 2 (p. 251) is one of the most brachycephalic of those of the Eastern Islanders of Torres Straits.

to stand on one leg, the sole of the foot of the other being applied just above the knee of the leg which supports the weight of the body; in fact, they assume the well-known attitude of the Dinkas of the Nile swamps.

So far we have been dealing with the Papuan inhabitants of the south coast of the Possession or of the near hinterland of this coast. We now pass to a far less known area, the northern coastline and its hinterland, which is inhabited by Papuan tribes from the Anglo-German boundary eastwards at least as far as Cape Nelson. On the coast the mountain *massif* which constitutes the Cape Nelson peninsula defines the eastern extremity of the territory of the true Papuans, but scant as is our knowledge there is every reason to believe that inland they extend eastwards, fusing more and more with the Papuo-Melanesians, so that ultimately a stage is reached in which we find a people who in culture and in physical characters are Papuo-Melanesians though speaking a Papuan language. Such tribes as these will be considered later among the Papuo-Melanesians; at present I shall consider only tribes that in the light of our present knowledge must be described as Papuan.

The Binandere Group.

The coast line from the German boundary to Porlock Bay to the west of Cape Nelson is inhabited by a people typically represented by the inhabitants of the lower Mamba River, all speaking dialects of a common language called *binandere* by Mr. C. A. W. Monckton. I propose to extend the use of this name so as to include the many tribes speaking these dialects. Physically the Binandere are a particularly sturdy set of people. I have not visited their country, but the average of 14 men, all members of the armed Native Constabulary and derived from villages scattered all over the country, was 1·658 m. (nearly 65¼ inches), while four were over 1·700 m. (nearly 67 inches), the tallest being 1·740 m. (over 68¼ inches). They are predominantly mesaticephalic with a tendency to brachycephaly (average 78). In general appearance they recall some of the Elema natives of the Papuan Gulf; but their mouths are perhaps larger, and the comparatively delicate nose found in some Gulf men does not, as far as my limited observation goes, occur among the Binandere, though in a minority of individuals the nose is strongly hooked. On the contrary, some of the broadest noses I have seen, with indices of over 100, occurred among the small number of Binandere I have met. Plate XX, Figs. 3 and 4, lent me by the Rev. W. R. Mounsey, represent typical Binandere of the Mamba River district. Plate XX, Fig. 5, reproduces a native of Cape Nelson belonging to the Kairikairi tribe, and Plate XXI, Fig. 1, three youths of the Okena tribe. This is one of the three tribes (Okena, Mokuru, and Korafi) inhabiting the Cape Nelson *massif*.

The Korafi have been studied by Dr. Rudolf Pöch, who in a preliminary publication states that they are mesaticephalic with a tendency to dolichocephaly, and considers that they have arisen from a mixture of Papuans and Melanesians,

though he could find no trace of Melanesian in their language.[1] All are Binandere-speaking tribes, but, according to Mr. Monckton, the Korafi are at enmity with their western neighbours, and really consist of the representatives of a number of broken tribes shattered by the pressure of other Binandere-speaking tribes moving east, of whom the Okena were the foremost until they were checked by a confederation headed by the Korafi shortly before this region came under Government influence. A portion of the coast line between Mokuru and Korafi—*i.e.*, between McLaren Harbour and Port Hennessey—is inhabited by the Arifamu, who, Mr. Giblin states, speak a Melanesian language and are lighter-skinned than their neighbours, and who are, at any rate provisionally, to be regarded as the most western representatives of the Papuo-Melanesian race. The Arifamu, according to Mr. Monckton, united with the Korafi in repelling the onset of the Okena and their kindred tribes.

The valleys of the Musa and the lower Kumusi rivers are inhabited by Binandere-speaking tribes; Plate XXI, Fig. 2, for which I am indebted to Captain Barton, represents a Kumusi River native. The inhabitants of the Opi and Yoda Valleys and the slopes of Mount Lamington, according to Mr. Monckton, resemble those of the Mamba and speak Binandere dialects, but are somewhat lighter in colour. The men of the Opi-Yoda sub-group, thus defined by Mr. Monckton, resemble the Binandere in being rather tall, the average of six men, all members of the Armed Native Constabulary, being 1·672 m. (65¾ inches), while the cephalic index of seven men varied from 70 to 82. The indices of this small number of subjects, who came from villages scattered over a wide area, are probably only worthy of record as showing that there may be a brachycephalic element in the population of this part of New Guinea.

Plate XXI, Figs. 3 and 4, represents Oiagoba Sara, the chief of the Barigi tribe in Ketakerua Bay immediately to the north of Dyke Acland Bay. It will be noted that his hair is worked into numerous tails. Hair-dressing of an allied form in which the hair is gathered in long tails bound round with the bast of the paper mulberry characterises a congeries of tribes inhabiting the upper waters of the Musa River and its tributaries, the Moni and Adaua Rivers. The tribes inhabiting the valleys of these rivers occupy the lower portions of the Main Range, but Mr. G. O. Manning informs me that other tribes with the same fashion of head-dress are found in the Hydrographers Range. Many of these tribes behind the Cape Nelson Peninsula are extremely warlike, and it was necessary to dispatch more than one punitive expedition before the Doriri, as the coast people call these hill and mountain men, could be induced to stop their raids. Until our knowledge of this part of New Guinea is greatly extended it will perhaps be advisable to recognise a Doriri sub-group constituted by the tribes inhabiting the upper waters of the Musa and its tributaries with the neighbouring part of the Main Range, and at least the eastern

[1] "Dritter Bericht über meine Reise nach Neu-Guinea," *Sitzungsberichte der kaiserl. Akademie der Wissenschaften in Wien, Mathem.-Naturw. Klasse.* Bd. cxv, Abt. 1, Mai 1906.

portion of the Hydrographers Range. Plate XXII, Fig. 1, of a native of the Adaua River, shows the method of hair-dressing described.[1]

I have been able to gather but little concerning the customs or beliefs of the Binandere of the Mamba River district. They are frankly cannibal and distinctly warlike, and are the only people who have ever attempted to combine in any number against the Government. They are perhaps totemic[2] and I have been told by those who know them that they are obviously less afraid of the dark and of supernatural agencies generally than other Papuasians.

I am indebted to Mr. Giblin for the following information which bears on this matter :—" At death the spirit *asisi* (the word used to denote a shadow, mirror or reflection of any kind) goes away into a sago swamp (*abu*). What becomes of it there is not definitely known, but some think that *asisi* enter into wild animals, more especially crocodiles, pigs and cassowaries. It is said that certain persons have on occasions recognised the features of their relations in crocodiles and pigs, and thereupon not only refrained from killing them (which was done instead by some bystander), but also refrained from eating the flesh of these crocodiles and pigs. It is also said that *asisi* on going into the swamp becomes a *binei*, *i.e.*, an evil spirit inimical to a man, though the word is also used to designate the 'clown' in the scenic dances of the Northern Papuans." Mr. Giblin heard of only one other variety of spirit, *etemi*, a class of sexless beings rather bigger than man, and possessed of a tail, but in other respects resembling mankind. *Etemi* are not numerous and their origin is unknown ; they chase people but do not injure them, though they laugh as if enjoying the fright they cause. Mr. Giblin could find " nothing in the nature of Deity, nor any approach to a word for worship " ; the strongest word was one used to describe the attitude of women and children in passing before old men, and might be translated as signifying " to crouch in respect."

Their dances are elaborately pantomimic and are more energetic than any I have seen performed by natives of other parts of New Guinea. Mr. Giblin tells

[1] I am indebted to Mr. G. O. Manning for the following description of how this form of head-dress is produced : " When a boy is about five or six he begins to pull his hair into one or two small pigtails, one usually about the middle of the top of the head. As this gets longer it hangs over his nose. Finally he grows more and then lets them all hang down behind. The hair is wrapped round and round with the inner bark of the paper mulberry." Some of the tribes of the upper Musa and its tributaries produce ornamental cicatrices as some of Mr. Manning's photographs show.

[2] With reference to this I may cite the following information given me by Mr. Giblin : " Nearly all village names are names of trees and generally there is only one clan living in each village." With regard to the existence of totemism he sends the following obtained from two boys resident at Dogura Mission Station, aged 17 and 14 years respectively. The former " says his totem is the *giriri* tree, which he does not cut for spear or firewood ; he does not eat the berries of this tree, his connection with which comes to him from his father ; his mother is of a different clan, which," says he, " I do not know, she has never told me." The younger boy states that his totem " is the *kanevidari* tree which is not a fruit tree. He does not cut it for any other purpose than as a pole for carrying pigs to a feast." These informants agreed that though no one should marry into his or her own clan this is sometimes done and nothing happens to persons doing it

me that each village possesses, or should possess, a dancing house inside which dancing takes place nearly every evening.

A great deal of care and time may be spent in preparing the properties for the dances. Captain Barton described to me one figure of a dance in which there was given an elaborate representation of a man fishing with a hook and line, the angler after many attempts succeeding in landing the fish, which was represented by a piece of wood about a yard long thoroughly well carved in imitation of a fish.[1]

The only information concerning the social system of the Cape Nelson Binandere-speaking tribes is that furnished by Dr. Pöch, who states that the Korafi have what is probably a degenerate totemic organisation. Each man has usually but one totem animal, which is usually a bird, and descent is patrilineal. A woman takes her husband's totem on marriage, though he now respects his wife's totem animal. The children also respect their mother's totem animal, though they invariably belong to their father's totem. Individuals of the same totem live under one roof in the same house-group, but there are representatives of many totems in the same village. Marriage takes place between individuals with the same totem.[2]

The system of enumeration made use of at least by some, if not by all, of the Binandere, including those of the Mamba district, is different from that of the Papuans of the southern coast, whose extremely limited command of numerals has already been remarked. Mr. Ray informs me that the Binandere have numbers up to three, and then count up to ten on the fingers, *e.g.*, the number 4 is signified by describing the hand with four digits flexed and the little finger (for which they have a separate term) extended; 6 by the thumb of the second hand, and ten by words signifying "hands two."

East of the Cape Nelson Peninsula, tribes speaking Papuan dialects occur, but, according to Mr. Giblin, they do not reach the coast again in an easterly direction for some 30 miles, where a tribe which he calls Pem appears some 20 miles west of Cape Vogel. Inland of this tribe other Papuan-speaking tribes extend in the mountains as far eastwards as about the parallel of 150 degrees east longitude, but along the coast Papuo-Melanesian folk speaking Melanesian dialects are found. It is generally agreed that the Papuan-speaking tribes east of Cape Nelson have not the tall stature and notable physique of the Binandere-speaking tribes, nor does their language resemble those of the Binandere stock. Probably they are to be regarded as related to the Mailu and Domara of the south coast, and, like them, are to be regarded as arising from the mixture of Papuans and Melanesians, and to be classed as Papuo-Melanesians.

I may refer here to a skull collected by Captain Barton at Kokoda, 13 miles E.S.E. of Mount Victoria in the Yodda Valley, *i.e.*, south of the Yodda River, with a cranial index of 77. The general appearance of this skull, judged by such characters as the prominence of its muscular impressions and development of its

[1] There was no special reason to suppose that this scene had any magical significance, certainly no difficulty was made about allowing Captain Barton to collect the "fish," which it was said was made only for amusement for this dance.

[2] *Op. cit.*

supraorbital ridges, agrees so well with the skulls belonging to the Papuo-Melanesian group that we may regard it as derived from an individual of this group, and provisionally consider the eastern slopes of the Main Range as the western boundary of the Opi-Yodda, Binandere-speaking group.

PAPUO-MELANESIANS.

Since the Massim present far less variation in physical and social characters than their neighbours, the Western Papuo-Melanesians, and possess a culture and inhabit an area both of which are far more easily defined, they will be considered before the Western Papuo-Melanesians, though this must not be taken to imply the opinion that the Massim were the earlier to arrive of the two immigrant races.

The geographical distribution of the Massim has already been referred to on page 253, but from information given me by Captain Barton it is clear that on the south coast they extend eastwards at least as far as Dufaure Island and the mouth of Mullins Harbour, while, according to Mr. Giblin, outliers of this stock extend on the north coast as far as the Cape Nelson Peninsula. The whole district, containing over 70,000 square miles of land and water, is characterised sociologically by the occurrence of mother-right and a peculiar form of totemism which may be associated with a dual or multiple grouping of the clans.[1]

With the exception of the Trobriands, Marshall Bennets and Murua, with its ethnographical annexes Nada (the Laughlans) and Tokunu (the Alcesters) and perhaps Yanaba, the district is equally characterised by the prevalence of cannibalism.

Except on the Trobriands and Murua, the politico-social unit of the district is a small community, in the majority of cases too small and of too little permanence to be called a tribe. Nor should the scattered dwellings of these communities be called villages, for, although they are commonly spoken of as villages by Europeans who visit them, they lack the cohesion that this term implies. Further, their organization is essentially different from that of the villages found in other parts of the Possession, for not only are the dwellings of the comparatively small community scattered over an area perhaps 1,000 yards long, but on inquiry it is found that each of the house groups (usually containing from three to eight houses) constitutes a settlement, having a proper name of its own, and acting in some matters as an independent unit, of which the inhabitants—disregarding for the moment individuals who have married in or who have been adopted—are of one clan, and more or less closely related to each other.

To such small settlements, which, throughout the greater part of the south-eastern district including its many archipelagos, form the working units of the

[1] The form of totemism referred to has been described elsewhere (*Man*, 1909, 3) so that it is only necessary to say that it is characterised by the possession by each individual of a series of linked totems belonging to different orders of the organic kingdom. Typically, each group of linked totems includes a bird, a fish, a snake, and often a plant, while four-footed vertebrates may be added to the list.

politico-economic system, I shall apply the term hamlet, rigorously limiting this term to settlements consisting of a number of houses inhabited by folk of one clan more or less closely related to each other by blood, or connected by marriage or adoption.

A number of hamlets, built in contiguity with each other, which are usually spoken of collectively by one name, and which act together for purposes of offence and defence, will be spoken of as a hamlet-group. An example of such a collection of hamlets is seen in the Discovery Bay hamlet-group,[1] usually known as Waga-waga.

On the Trobriands and Murua true villages are found, and on these islands there are hereditary chiefs who possess real authority which differs greatly both in quality and extent from the comparatively slight influence possessed by old or important men throughout the greater part of the area under consideration.

Although the mainland and the majority of the islands of the district are fertile, and carry enough good soil to make gardens large enough to ensure an abundance of food for their population, certain thickly populated and comparatively small islands, such as Wari (Teste Island), do not at the present day produce, and perhaps never have produced, sufficient food for the needs of their inhabitants, with the result that trading communities have been evolved who depend to a considerable extent on imported food.

If a line be drawn obliquely from the north-western to the south-eastern corner of the Massim area it will be divided roughly into halves. The southern half, comprising by far the greater part of the land area, is inhabited by a short, predominantly dolichocephalic, rather broad-faced people with moderately dark skin and frizzly or rarely curly hair, and often a "snouty" mouth. In the northern half, that is to say, in the Trobriands, Marshall Bennets and Murua, the people are usually somewhat lighter in colour, and often have curly or wavy hair. Many of the men are taller, and they are, as a rule, less prognathous. Their skulls are rounder, and their noses often longer and narrower, while the bridge of the nose may be high and narrow. But these characters are shown only by a portion of the natives of these islands, and even in them the degree in which they occur is not constant. In fact, if skin colour be ignored, it is possible in the Trobriands to meet with individuals making a complete series from typical Papuo-Melanesians to tall, good-looking men who are quite Polynesian in feature, and it appears that these differences (and certain cultural peculiarities which accompany them) can be satisfactorily accounted for by a local infusion of foreign blood.

The Massim communities, as far as we at present know them, present so many common features that there does not seem to be any urgent necessity to divide them into groups, but if such classification be desired they might be divided provisionally into a northern and a southern group, the former including the Trobriands, the Marshall Bennets, Murua and its ethnographical annexes already

[1] I am indebted to Dr. Haddon for suggesting this term, which I consider preferable to "village-system" which I have used elsewhere, *e.g.*, in *Man*, *loc. cit.*

mentioned on page 268. Further, the fact that it may later be found necessary to include Misima and Panniet in this group must not be overlooked. Nor must it be forgotten that we know nothing of the inhabitants of Yela (Rossel Island) at the extreme east of the New Guinea Archipelagos, nor of the inhabitants of the interior of the larger islands of the D'Entrecasteaux group, and that until these are explored no classification of the Massim can even approach finality.

The predominant dolichocephaly just referred to shows a tendency to mesaticephaly which becomes especially obvious in measurements taken on the living. A varying number of brachycephals occur everywhere throughout this area, though in some places the proportion of brachycephals may be very small. Here and there individuals with curly and wavy hair occur, though these are far from common, except in the Trobriands and the Marshall Bennet groups.

The inhabitants of the D'Entrecasteaux group, composed of the three large islands of Goodenough, Fergusson and Normanby, appear to be the most dolichocephalic of the Massim. Sergi[1] has examined 118 skulls collected by Loria from Dawson Straits—*i.e.*, presumably the villages fringing the straits between Fergusson and Goodenough. Of these 118 skulls of both sexes 92 (78·2 per cent.) are dolichocephalic, 21 (17·6 per cent.) are mesaticephalic, and only 5 (4·2 per cent.) brachycephalic. Considering the difference in numbers this proportion agrees fairly well with the figures given by a series of thirty-four skulls with an average cranial index of 73 collected from a cave at Awaiama in Chads Bay and measured by Dr. Duckworth. This cave was said to be the depository of skulls brought over from Goodenough or Fergusson, though it is possible that the skulls are, in fact, those of the inhabitants of Chads Bay or the coastal Taupota villages just east of it. Thirty-one of these skulls (91 per cent.) are dolichocephalic and three (9 per cent.) are mesaticephalic. The average cephalic index of eight Goodenough natives is 75, so that if the two units usually deducted from living cephalic indices to make them comparable with skull indices be subtracted here, the living and skull averages give identical figures. With the average cephalic indices of 77 and 76 respectively of a small number of Fergusson and Normanby men, the correspondence though not so close is sufficiently striking. These natives of the D'Entrecasteaux group were the shortest I saw in New Guinea. Two out of eleven Fergusson men measured were under 1·470 m.—*i.e.*, considerably under 58 inches—while the average of the whole eleven men was 1·530 m. (about 60¼ inches). Seven Goodenough natives were taller, averaging 1·588 m. (about 62½ inches). Plate XXII, Fig. 2, shows a group of Fergusson Island natives.

Dr. Karl Hauser[2] has examined eight male skulls and two female skulls collected by Dr. Finsch on Dobo (Goulvain Island) to the east of Normanby Island, which may belong to the islanders themselves or be those of enemies from the neighbouring coast of Normanby or Fergusson. The eight male skulls give an

[1] "Le Varietà Umane della Melanesia," *Boll. del R. Accad Med. de Roma*, xviii.

[2] *Das kraniologische Material der Neu-Guinea-Expedition des Dr. Finsch* (1884-85) *und eine Schädelserie aus Neu-Irland.* Berlin, 1906.

average cranial index of 72·5 (min. 70·9, max. 74·9), but the two female skulls have indices of 78·5 and 79·8 respectively.

The coastal and bush natives of Bartle Bay in Goodenough Bay present as a rule very much the same appearance and physical characters as the Goodenough or Normanby men, but, as far as the small number examined went, tended more to mesaticephaly, while rare individuals among them had altogether finer features recalling a type by no means uncommon on the Marshall Bennet group.[1]

On the main land further to the east although dolichocephaly is predominant, mesaticephaly, and even brachycephaly, are not rare. Wagawaga lies almost at the head of Milne Bay; of ten Wagawaga men with an average cephalic index of 74 one was brachycephalic, similarly of ten skulls from Milne Bay giving an average cranial index of 73, nine are dolichocephalic and one brachycephalic with an index of 82. Fig. 3 of Plate XXII represents a Milne Bay youth, while Fig. 4 of the same plate is a photograph of a native of Sariba Island near Samarai.[2] The first of these photographs seems to me to be extremely typical of natives of this part of New Guinea. Much the same condition of things appears to prevail in the neighbourhood of East Cape, since five skulls from Nuakata (Lydia Island) including one brachycephal give an average index of 74. Practically nothing is known concerning the people in the mountains behind Milne Bay, but of the two men from Buhutu (which appears to be a general name for this mountainous country) measured, one was dolichocephalic, the other a brachycephal. Brachycephaly is also met in the neighbourhood of South Cape, where the average of seven skulls had risen to 76 (min. 71, max. 81), while the only man measured from this neighbourhood had a cephalic index of 84.

The inhabitants of Tubetube in the Engineer group, situated about half-way between Milne Bay and the Louisiades, allege that they originally came from the eastern end of Duau (Normanby), whose inhabitants in a general way they resemble. The average cephalic index of ten natives measured was 74 (extremes 71 and 75) and their average stature 1·555 m. (61 inches).

Passing east beyond the Engineer group in which is situated Tubetube to the Louisiades, there appears to be a general rise in the cephalic index of the living. The average of nine men, only one of whom was dolichocephalic, while three were brachycephalic, was 79. This raising of the index is not so clear in the few skulls accessible, but occurs nevertheless, since of six skulls of this group in the British Museum giving an average cranial index of 74 (minimum 69, maximum 77), four skulls are dolichocephalic and two mesaticephalic. Figs. 1 and 2 of Plate

[1] Fig. 9 of the *Lancet* abstract (p. 428) shows a fairly typical native of Goodenough Bay.

[2] The rather uncommon physiognomy of this subject (Melanesian) is to my mind suggestive of Papuan ancestry. If I am right in this belief the occurrence of this type of face among the Massim in the neighbourhood of Milne Bay (where I met several examples) must be explained in the same manner as the occurrence of types showing Papuan influence among the western Papuo-Melanesians (*cf.* pp. 254–5 and Plate XVI); recent Papuan influence can certainly be excluded.

XXIII respectively represent natives of Misima and Sabari (11° 08′ S., 153° 06′ E.), both in the Louisiade archipelago.[1]

The Trobriand group lies some fifty miles north of Fergusson Island, and though certain islands of the former group send trading expeditions to the D'Entrecasteaux, I believe that intermarriage does not occur. Murua (the Woodlarks) lies 100 miles east and somewhat to the south of the Trobriands, it is also about 100 miles due north of the Louisiades. Between the Trobriands and Murua are the raised atoll islands of the Marshall Bennet group. Although the inhabitants of the Trobriands and of Murua undoubtedly belong to the Papuo-Melanesian group and share with the other archipelagos many of their chief social and cultural characteristics, the Trobriand and Marshall Bennet groups are differentiated socially by their recognition in each district or island (where these are coextensive) of a royal family in which there descends an hereditary chieftainship which really commands respect. Perhaps this is (or was) equally true of Murua, but upon this point I have no definite information.

On all these islands, and also on Panniet (Louisiades), the big sea-going canoes *waga* are built, and it is on these islands that the decorative art characteristic of the whole Massim district has reached its highest expression in the carving of the ornaments for the prows of the *waga*.[2] Plate XXIII,[3] Fig. 3, represents two Trobriand Islanders, and Fig. 4 of the same plate shows a native of Panniet.

A large number of skulls have been examined from Murua. A collection of thirty-seven brought back by Loria have been examined by Sergi,[4] while for the figures relating to forty collected by myself and colleagues in 1904 I am indebted to Dr. W. L. H. Duckworth. The figures given by these two collections vary considerably as to the prevalence of dolichocephaly and brachycephaly. In both collections the percentage of mesaticephalic skulls is about forty (43·2 Sergi and 40 Duckworth), but while 29·7 per cent. and 27·8 per cent. of Sergi's skulls are respectively dolichocephalic and brachycephalic, in our skulls there were 52 per cent. of dolichocephals. The average cranial index for Sergi's skulls is 79, that for those examined by Dr. Duckworth is 75 (minimum 68 and maximum 83). On combining the two collections dolichocephals and mesaticephals both occur to the extent of about 40 per cent. (40·2 per cent., and 41·5 per cent.), while the remaining 18 per cent. are brachycephals. It is not stated on which part of the island Loria's collection was made, our skulls were obtained from exposures in shallow caves and crevasses in the dolomitic cliffs about seven miles west of Mapas Island. Measurements of six men of Suloga village were taken; all of these were mesaticephals or brachycephals with indices varying from 78 to 85, and giving an average of 80·5.

[1] I have not visited the Louisiades, my first-hand knowledge of the natives of this group being confined to nine natives whom I met and measured at Samarai.

[2] I am indebted to Mr. G. W. C. Pim for the information that *waga* with characteristic carving are, or were, also built upon Misima.

[3] For the use of this photograph I am indebted to Mr. A. C. English.

[4] *Op. cit.*

The Marshall Bennet group is inhabited by a short people (average 1·577 m., *i.e.*, about 62 inches), whose hair is often curly, and whose skin colour is the usual South-eastern tint, viz., a bronze brown. Measurements of 15 men from Gawa and Kwaiawata (average cephalic index 80) show that these islanders are predominantly brachycephals or high mesaticephals, the latter conclusion being borne out by the average cephalic index of 70 (minimum 77, maximum 91), derived from 35 skulls collected on Kwaiawata and examined by Dr. Duckworth.[1]

Here, as at Murua, two types—one long-faced and leptorhine or mesorhine, the other platyrhine and generally broad-faced—could be distinguished; a similar distinction is seen in the Trobriand Islanders, who in custom and culture appear to be identical with the Marshall Bennet group. Physically, however, the Trobriand people seem rather taller and tend more to mesaticephaly, the average stature of 20 Trobriand men being 1·609 m. (about 63½ inches), with an average cephalic index of 78 (minimum 72, maximum 84). Like the Marshall Bennet Islanders, their hair is often wavy.[2]

Although in many places, *e.g.*, in Milne Bay, the natives said that different clans might be recognised by their *gia*, *i.e.*, nose, and in a broader sense, face, I could never see that the differences alluded to occurred with particular constancy in any particular clan. But apart from any question of clan, it was easy to recognize in natives of Murua, the Trobriands and the Marshall Bennets, two more or less constant types to one or other of which the majority of the male population inclined. The chief difference in these types can be expressed by the nasal and facial indices and has already been stated. It did not seem that these qualities were especially associated with brachycephaly or dolichocephaly, or with the quality of the hair, though it appeared that men of the long-faced type were generally taller, and often very notably so, than the individuals of the short-faced, broad-nosed type, in whom the bridge of the nose was often low. Although no measurements of Trobriand chiefs were taken, the two members of one of the royal houses that I met were obviously of the long-faced, tall type. Again, at Suloga on Murua and at Gawa in the Marshall Bennets it was clear that certain men, who seemed to possess in a special measure the confidence of their comrades and who certainly showed a degree of initiative or a readiness to help us in carrying out our plans which the majority of their companions did not, were of this type.

From what has already been said it will be clear that I attribute this improvement in type to Polynesian admixture, evidence of which becomes more marked in the eastern archipelagos as the mainland of New Guinea is left behind. The difference in type found in passing from the west to the east is particularly shown in the increase of the cranial index and the cranial capacity, concerning which Dr. Haddon writes:

"The average cranial index of males and females for Dawson Strait is as

[1] These islanders prepare the skulls of their dead relatives and keep them in their houses.

[2] Figures of men from the Marshall Bennets showing the difference in the two types of face will be found in the *Lancet* abstract (Fig. 10, p. 505).

nearly as possible 72·8 (min. 65·2, max. 88·1), while that for Murua is 78·9 (min. 71·9, max. 92·2). A consideration of the indices shows that this difference is not due merely to a relative increase in the brachycephals, but also to a raising of the index all round. Thus, taking the male cranial only, the minimum for Dawson Strait is 65·2, while that for Murua is 71·9, and the media are respectively 71·9 and 77·9. These conclusions are still more strongly borne out by the female crania.

"The Murua crania are also of a greater capacity than those from Dawson Strait. I find they work out thus[1]:"

		Dawson.	Murua.
		per cent.	per cent.
Microcephalic	–1200	34	3·2
	1200–1350	43·1	22·6
Mesocephalic	1350–1450	12·1	38·7
Megacephalic	1450	10·8	35·5

[1] These figures are derived from the skulls described by Sergi.

Explanation of Plates.

PLATE XVI.

Two men of Hanuabada, Port Moresby. (Capt. F. R. Barton.)

PLATE XVII.

Fig. 1.—Nara man, showing wavy hair. (Capt. F. R. Barton.)
Fig. 2.—A Purari River group. (Capt. F. R. Barton.)
Fig. 3.—Men of Goaribari, Aird River delta. (Capt. F. R. Barton.)

PLATE XVIII.

Fig. 1.—Two men of Toaripi. (Capt. F. R. Barton.)
Fig. 2.—A Jokea youth. (Capt. F. R. Barton.)

PLATE XIX.

Fig. 1.—Part of an *eravo*, Purari River. (Capt. F. R. Barton.)
Fig. 2.—Part of an *eravo* at Vailala, Papuan Gulf. (Capt. F. R. Barton.)
Fig. 3.—The Goddess Ukaipu from an *eravo* at Orokolo, Papuan Gulf. (Dr. H. S. Harrison.)

PLATE XX.

Fig. 1.—A group of Masingara. (Dr. A. C. Haddon.)
Fig. 2.—A group of Toro men. (Mr. A. Jewell.)



TWO MEN OF HANUABADA (PORT MORESBY).

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.



1. NARA MAN, SHOWING WAVY HAIR.



2. A PURARI RIVER GROUP.



3. MEN OF GOARIBARI (AIRD RIVER DELTA).





1. TWO MEN OF TOARIPI.
2. A JOKEA YOUTH.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.



1. PART OF AN ERAVO, PURARI RIVER.



3. THE GODDESS UKAIPU (OROKOLO, PAPUAN GULF).



2. PART OF AN ERAVO AT VAILALA (PAPUAN GULF).



1. A GROUP OF MASINGARA.



2. A GROUP OF TORO MEN.



3. A MAMBA RIVER MAN.



4. MAMBA RIVER GROUP.



5. A MAN OF THE KAIRIKAIRI TRIBE (CAPE NELSON).

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.



1. THREE YOUTHS OF THE OKENA TRIBE (CAPE NELSON).



2. KUMUSI RIVER MAN.



3. OIAGOBA SARA, CHIEF OF THE BARIGI TRIBE.



4. OIAGOBA SARA, CHIEF OF THE BARIGI TRIBE.



1. MAN FROM THE ADAUA RIVER.



2. FERGUSSON ISLAND GROUP.



3. YOUTH OF MILNE BAY.



4. MAN OF SARIBA ISLAND.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.



1. NATIVES OF MISIMA.



3. TROBRIAND ISLANDERS.



2. NATIVE OF SABARI ISLAND (LOUISIADES).



4. NATIVE OF PANNIET.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.

Fig. 3.—A Mamba River man. (Rev. W. R. Mounsey.)
Fig. 4.—Mamba River group. (Rev. W. R. Mounsey.)
Fig. 5.—A man of the Kairikairi tribe, Cape Nelson. (Capt. F. R. Barton.)

Plate XXI.

Fig. 1.—Three youths of the Okena tribe, Cape Nelson. (Capt. F. R. Barton.)
Fig. 2.—Kumusi River man. (Capt. F. R. Barton.)
Fig. 3.—Oiagoba Sara, Chief of the Barigi tribe. (Capt. F. R. Barton.)
Fig. 4.—Oiagoba Sara, Chief of the Barigi tribe. (Capt. F. R. Barton.)

Plate XXII.

Fig. 1.—Man from Adaua River. (Capt. F. R. Barton.)
Fig. 2.—Fergusson Island group. (Capt. F. R. Barton.)
Fig. 3.—Youth of Milne Bay. (Capt. F. R. Barton.)
Fig. 4.—Man of Sariba Island. (Dr. H. O. Forbes.)

Plate XXIII.

Fig. 1.—Natives of Misima. (Capt. F. R. Barton.)
Fig. 2.—Native of Sabari Island, Louisiades. (Dr. H. O. Forbes.)
Fig. 3.—Trobriand Islanders. (Mr. A. C. English.)
Fig. 4.—Native of Panniet. (Dr. H. O. Forbes.)

THE SO-CALLED NORTH EUROPEAN RACE OF MANKIND.

A REVIEW OF, AND VIEWS ON, THE DEVELOPMENT OF SOME ANTHROPOLOGICAL QUESTIONS.

(*The Huxley Lecture for* 1909.)

By Professor Gustaf Retzius.

When I received the flattering invitation from the Council of the illustrious Royal Anthropological Institute of Great Britain and Ireland to give the "Huxley Memorial Lecture" this year in London, I rather hesitated to accept this honour, having of late for some years devoted myself chiefly to researches in the world of the microscope.

But in recalling to my mind the image of that man in memory of whom these lectures are instituted, and in considering what science owes to him, my desire to accept the invitation overcame finally my hesitation. This decision was last but not least confirmed by the recollection of the numerous proofs of cordiality and friendship which I had received from that grand scientist on the occasions when I had the pleasure of meeting him, and also in other ways.

Though that matter was thus settled, there still remained the difficult problem of selecting a subject suitable for the purpose.

The races of Europe, to which I have principally devoted my anthropological studies, had already been comprehensively dealt with by Dr. Deniker in 1904, in his Huxley Lecture on that subject. I thought next of the enticing task of attempting to give a survey of the finds, both of early and recent date, relating to the ancient so-called *Neanderthal race* in Europe, which in so many respects are apt to confirm the ingenious conception of Huxley himself regarding the relation between that race of ancient times and those of the present day. However, as the documents dealing with the most recent finds are as yet only published in part, it would not have been suitable to take up that topic for a detailed discussion, tempting though it might be to do so.

It is doubtless an essential feature of these lectures, that the subject should be chosen in that particular field of anthropological science to which the respective lecturer has devoted his special attention. Consequently, I have decided to choose that branch of the blond long-headed race in Europe which, from ancient times, has had its home in my native country of Sweden, and I propose to deal with it in my lecture to-day, seeing that it is upon that that my own researches in

anthropology have mainly been directed. That race, which has for a long time past been spread over northern, and especially north-western Europe, and which has recently, owing to emigration, begun to form an increasingly large element in the white population of North America and other continents, has not been subjected to thorough investigation until recently, and is therefore, comparatively speaking, little known.

It was principally the study of the shape of the cranium that led anthropologists to pay special attention to and define this race and element, now usually termed the North European race, and so it may be of interest to my audience if I recapitulate here the chief facts in the history of our knowledge regarding that part of the human frame. It is the more desirable for me to do so, as it has become the fashion latterly—not so much among the representatives of the science of anthropology themselves as among outsiders—rather to diminish the importance of that portion of anthropology which is termed craniology. It is evident that these opponents, some of them hypercritical, others quite uncritical in their judgments, have unreasonably looked for startlingly remarkable results from this method of investigation, and have been ready, on discovering that the solution of the great problems has not been immediately forthcoming, to throw the blame for that on the method itself. That, however, is unjust in the extreme. On the same principle it would be possible to condemn various other branches of scientific research, *e.g.*, meteorology, physiology and several of the branches of medical science, for they too have failed as yet to lead us to the goals we have imagined we were to reach by their aid. The fact is, we imperfect human beings have got to realise that the highest goals are also the most difficult of attainment, and moreover, that nothing whatever is absolutely certain. Do we not repeatedly see that faults and deficiencies are discovered in almost everything that has been once for all, as it was thought, accepted as true and perfectly sure? To take a case in point, it is not many years ago since we were informed and taught, both at school and elsewhere, that the chemical elements were strictly individual and invariable, whereas now that theory has been proved to be untenable by the epoch-making discoveries of Sir William Ramsay.

But even if the investigator is not successful in arriving at the final solution of the problem which he is engaged upon, the labour that he expends in his efforts serves to extend the knowledge of the subject continually. In this connection I may perhaps be allowed to quote the apt words of the great natural scientist, Carl Ernst von Baer, written half a century ago, in his well-known "Bemerkungen" upon the desiderata for future investigation in the department of craniology, relative to the suggestions for the classification of the various forms of the cranium, which had been made by a prominent Swedish anatomist of that day: "Mir scheint, dass dieser Impuls Epoche in dem Studium der Verschiedenheiten der Völkerstämme und Völker, somit auch in dem Urtheil über die Bedingungen derselben machen kann und hoffentlich auch machen wird. Nicht als ob ich glaubte, dass diese Früchte schon morgen in den Schooss fallen werden, oder auch nur in der

Zeit eines Menschenalters geärndtet werden . . . . Die wissenschaftliche Forschung führt uns freilich nicht ganz zu den letzten Zielen, die wir allmählich erkennen oder wenigstens ersehnen lernen, aber die letzten Ziele mit Bestimmtheit in's geistige Auge gefasst, lassen doch eine Menge Verhältnisse auffinden und erkennen, zu denen wir nicht gelangen würden, wenn wir nicht nach den wissenschaftlichen Zielpunkten zu suchen lernten."

If now a just and impartial summary be made of the results of research in craniology during the past half-century, it will be found that their total amount is by no means unimportant, even though the actual aim that was sought to be attained has not been reached. It must be remembered that anthropology makes use of a variety of methods and the object in view is to advance knowledge as a whole by a wise combination of them all. Science is, as a rule, most satisfactorily advanced by her devotees applying a new method or a new process for a considerable time after its discovery, and indeed until it no longer proves efficacious or until it has been superseded by a better one. It is bound to happen that from time to time a pause, as it were, in the general advance will occur, and when that is so, it is apt to call forth expressions of disappointment and of unjust criticism both of the method employed and of the scientist who still adheres to its use. Examples to illustrate the truth of this might be adduced, did time permit, from the domain of more than one of the sciences.

After these introductory remarks I now go on to give a brief survey of the development of craniological research, and propose, in doing so, to lay particular stress on the early stages, partly because they appear to have been rather left out of sight latterly, and partly because they are of especial importance in regard to the subject with which I am here going to deal, viz., the anthropology of the North European race.

* * * * * *

The first scientist who found a place in the natural system for human beings, was, it will be remembered, Linnæus, the Swedish naturalist. He was also the first to subdivide human beings into distinct zoological categories. Men, he says, form one *species*, but among them there are to be found several *varieties*. He differentiated four, one in each of the continents then known, characterising them principally by the colours of their skins: Americanus rufus, Europæus albus, Asiaticus luridus, Afer niger. He also gave a category which he named Monstrosus, embracing certain varieties of an abnormal type with which he was not acquainted. The people living in Polynesia were wholly unknown to him. As for the white man, Europæus, the description he gives of him shows that he was only familiar with that section of Europeans living in the northern parts of the Continent. Linnæus himself had not extended his foreign travels beyond Northern Germany, Holland, Northern France, and England. Thus, when he defines his Europæus as: "Albus, Sanguineus, Torosus, Pilis Flavescentibus, Prolixis, Oculis Cæruleis," the characterisation, especially in the last items does not, generally speaking, suit the population of the whole of Europe, but rather only that of its

northern districts, *i.e.*, the peoples usually classed as belonging to the Teutonic family; the Scandinavians and the inhabitants of Holland, England, and the northern parts of Germany and France. Linnæus himself, however, undoubtedly included the peoples of Europe in general under his Europæus, differentiating them as a whole from the varieties of Homo sapiens to be met with in Asia, Africa, and America. The attempt made recently in some quarters to place the Alpinus of Linnæus side by side with his Europæus, as representing the population of the mountainous regions in Central and Southern Europe, is palpably due to a misinterpretation of Linnæus' own statements. His "homines Alpini," it must be observed, are classified in the imagined group "Homo Monstrosus," along with "Monorchides, Macrocephali, Plagiocephali," *i.e.*, forms of a more or less abnormal character, his knowledge of which was probably derived from the works of other writers or from hearsay evidence. If any definite race of man was in his mind when he spoke of "Alpini," it was probably the Laplanders; at any rate that is the view of those who know the work of Linnæus best, for he had had opportunities of studying the Lapps at close quarters, and describes them in another passage as "parvi, agiles, timidi." As he does not actually state, however, that he meant the Laplanders by his Alpini, it is best not to attempt to identify the two, but to leave the Alpini among the group of "monstrous" or abnormal varieties. It has appeared to me desirable to raise a protest at this early stage of my argument against the deductions and conclusions that have been recently made regarding the "Homo Alpinus" of Linnæus, for they cannot possibly be correct. Moreover, I have personally investigated all the different editions of Linnæus' *Systema Naturæ* as well as the hitherto unprinted notes taken by his pupils during his lectures, and have come to the definite conclusion that he only assumed that there is *one* variety of Homo sapiens in Europe, viz., Europæus, but that he described that variety in accordance with the observations he had made personally in intercourse with those around him in his native country and in other parts of Northern Europe, and that he placed this variety side by side with those of the other continents: Africa's black variety, Asia's yellow variety, and America's red variety.

It is a known fact that other writers too, such as Leibniz, Buffon, Kant, John Hunter, etc., have treated the subject of the different varieties of the human race in various ways, but for the most part only in vague and general terms.

Blumenbach, the German anatomist, was the first to enter upon the investigation of the human race in a serious manner from the standpoint of a natural scientist, and to study its different varieties comprehensively and exhaustively. His subdivision, like that of Linnæus, was in accordance with the continents and with the colour of the skin and hair. He, however, noted for the first time variations in the *shape of the skull and the face.* Blumenbach added one more to the four principal varieties into which Linnæus divided Homo sapiens, this fifth variety, which was unknown to Linnæus, being located in the islands of the Pacific. Blumenbach's names for his five varieties were, we may remember:

the Caucasian, the Mongolian, the Ethiopian, the American, and the Malayan. The Caucasian embraced all the peoples of Europe except the Finns and the Lapps, but also included the peoples of Western Asia as far as the River Ob, the Caspian Sea, and the Ganges, and also the inhabitants of Northern Africa. This variety was characterised as possessed of *white skins, red cheeks, brown or nut-brown hair, rounded skulls, oval faces, slightly arched and rather slender noses, small mouths, perpendicular front teeth, and as not having big lips.*

The only peoples in Europe Blumenbach did not classify in this group, viz., the Finns and Lapps, he placed among the Mongolians.

Blumenbach published his characterisation of the five varieties of the human race in his well-known work, *De generis humani varietate nativa* (first edition, 1775, third edition, 1795). It is very clear from several remarks he makes, that he was concerned with *the shape of the skull* as well as with the colour of the hair and the skin. In his anatomical museum at Göttingen he had a fairly large collection —for that time—of human skulls, containing representatives of even very distant regions of the earth. His fundamental work, *Decas collectionis suae craniorum diversarum gentium illustrata* (1790–1820) deals with this collection. The work consists really of six decades containing sixty plates in all; a further five are reported to have been published subsequently in 1828, but I have not had the opportunity of seeing them, and another five appeared posthumously, long after his decease, though he had prepared them for publication before he died. It is a recognised fact that Blumenbach took into consideration also the shape of the skull itself, especially its length and breadth, its sincipital aspect—what he calls *norma verticalis*—and that he distinguished between "the square shape," characteristic of the Mongols, and "the pressed-in from the sides" form, as found in negroes, and that he recognised the round, beautiful, intermediary form, represented by the Caucasians. Regarding the Malayan skull, on the other hand, he only remarks that the forehead is narrower, and about the American variety he merely states that the form of the forehead and of the skull have been in most cases artificially altered. However, in later editions of his above-mentioned work, *De generis humani varietate nativa*, he gives figures of three crania, viz., an Æthiopian woman, a Femina Georgiana, and a Tungus woman, and strangely enough the sincipital aspect of the Georgian woman is far more square (with markedly developed parietal tubera) than that of the Tungusian, whose sincipital aspect is more nearly oval-elliptical and very much like that of the negress, though larger in dimensions. In any case it is a fact that Blumenbach has displayed in this figure three crania as seen in what he calls the *norma verticalis.* Yet a study of his principal contribution to craniology, his *Decas,* shows that he considers, as he states definitely at once in his introduction, that the *os frontale et maxillaria* are the most important part of the entire cranium, forming as it were the foundation of the rest, and that they vary least, whereas the posterior sections of the cranium are of less importance and vary more. That this was his opinion is indisputably corroborated by the numerous figures in that same work of his.

Among all the figures (I–LX) in the first six decades of the work and among those published posthumously (LXVI–LXX) there is *not a single one* reproduced in the sincipital aspect, *i.e.*, in his own *norma verticalis*. (As mentioned above, I have been unable to examine the character of the figures LXI–LXV). *One only* of the crania is represented full face (*norma frontalis*), fourteen in a fairly exact profile or side view (*norma lateralis*), while *all the remaining forty-five* are given in a more or less exact half profile, *i.e.*, in none of his *normæ* at all; none, consequently, in *norma occipitalis*. It is evident from this how little he himself valued his *normæ*, more especially his *norma verticalis*. From the figure, and also from the descriptions he gives, one can perceive that Blumenbach concentrated his attention, in his craniological researches, primarily upon the *physiognomical* elements in the appearance of the cranium and especially of the forehead and the other parts of the face, *i.e.*, upon the typical features of the physiognomy. A confirmation of this may be found in the circumstance that, so far as is known, he never, or practically never, carried out measurements of the crania, either in his investigations or when he was describing the differences of shape in the crania he had collected. The most reliable evidence, however, of Blumenbach's not having grasped and appreciated the real value of the *norma verticalis* of the crania, and especially the importance of the ratio existing between the length and the breadth of the skull, lies in the fact that he included in one or other of his five varieties peoples whose sincipital aspects, and especially also the indices of length and breadth, are exceedingly different one from another. To take an example: he placed in his Mongolian variety Lapps and Eskimos, races of men that are very divergent as far as the shape of the cranium, especially their length and breadth relation, is concerned. In the Caucasian group, too, he collected a number of peoples whose crania show very marked differences one from another. It is very remarkable, moreover, that he selected the name Caucasian as suitable for the peoples of Europe, with the Caucasus and its round-headed population as the central point.

It has appeared to me desirable to bring forward these historical data by way of introduction to my account of the anthropology of the European, more especially the North European, race. My intention in so doing is not to depreciate in any way Blumenbach's very real merits, but simply to state the true facts as they have presented themselves to me, as a result of the critical examination of his works that I have undertaken. In other places I have already had occasion to point out these considerations regarding the matter in hand, most recently in the introduction to my work entitled *Crania Suecica Antiqua* (1899 and 1900), but nevertheless the earlier view, which is palpably false, still seems to be held in certain quarters. It is quite clear that Blumenbach has the merit, as above stated, of being the first to make a serious and extensive study of the form of the crania of the different races of mankind, but he appears to have been fettered by his absolute belief in the uniformity of his five varieties, and he neglected to observe that within them there are assembled races, whose crania-forms are so typically different, that these races cannot be brought together in the system. It seems singular to us that, although

he was a thorough naturalist, he should have classed together such widely separated races as Lapps and Eskimos, to confine ourselves to that one striking example already adduced. It would seem that his attention had become closely fixed upon the physiognomical characters of the facial features of the crania, as indeed is plainly apparent from a study of the Decades, his principal work on the crania. If, in pursuing his investigations, he had made use of his *normæ*, and especially his *norma verticalis*, he might have advanced science more than he really did. Blumenbach has the merit of having introduced into the science of anthropology the study of the form of the skulls—he is the real founder of Craniology. But his work shows a lack of clearly defined lines, of fixed points of starting, and of incentives to fresh investigation. Consequently his work in Craniology could not stimulate other scientists to successful researches, and a considerable time passed without real results in this department of science. Neither Sandifort nor Prichard were able, moreover, to furnish any new suggestions to help towards the solution of this particular question, though the latter rendered great services by his large and comprehensive work on Ethnology, and deserves to be looked upon as one of the pioneers in that field of inquiry.

In the year of Blumenbach's decease, 1840, Anders Retzius, the Swedish anatomist, laid before the Academy of Sciences in Stockholm the first draft of his theory regarding the shape of the crania, and in 1842 he lectured on "The Form of the Skulls of the Northern peoples of Europe" to an assembly of Scandinavian natural scientists in Stockholm. That lecture was subsequently translated and published in Holland, France, and Germany. It aroused no little attention in the scientific world, for it brought forward new suggestions and new points of view.

Up to then it had been usual to regard each of the varieties, into which the human race had been subdivided by Linnæus and Blumenbach, as essentially *uniform*. Anders Retzius, however, now showed, as a result of his unprejudiced and accurate investigation of the forms of crania upon which Blumenbach principally founded his theory, that not even the Caucasian variety, established as a unit by Blumenbach, was uniform throughout; that it indeed, on the contrary, included races of men possessed of very different forms of the skull. He not only proved that the Lapps, Finns, and Eskimos, whom Blumenbach brought together and placed in the Mongolian variety, have crania so widely differing from each other, that they cannot possibly belong to one and the same variety, but also that the proper inhabitants of Scandinavia, *i.e.*, the Swedes, Danes, and Norwegians, differ materially in the shape of the cranium from the inhabitants of Russia, and from the other peoples related to them, *i.e.*, the Slavs.

The skull of the Scandinavian is narrow and more extended backwards, and when looked at from above is more or less oval in outline; that of the Slavs on the other hand is broader, shorter, and when seen from above is more or less round in outline or squarer. The peoples with the longer shape of the cranium Anders Retzius called *Gentes Dolichocephalae*, those with the shorter *Gentes Brachycephalae*. In arriving at his conclusions he made use of *measurements* of the crania in various

directions. For the ratio between the measurements of maximum length and maximum breadth of cranium he adopted 1,000 : x. In Swedes the ratio of length to breadth was found to be 1,000 : 773, in Slavs 1,000 : 888, etc. Anders Retzius had thus given the initiative to the *index*-measurement system, which has since played so important a part in anthropology.

In the following years, until his death in 1860, there appeared a succession of treatises and reports, in which he placed on record the results of his continued investigations, and in them he made it abundantly evident that the relation between the length and the breadth of the cranium forms one of the most important criteria for race distinctions that those engaged in making a comparative study of the races of mankind can employ. He tried to group the peoples both in and beyond Europe by the aid of this relation, but it was not by any means his idea thereby to establish any sort of "system of the races of mankind," as is mistakenly supposed by some. In his works Anders Retzius spoke of the classification as merely *an attempt to arrange the forms of Crania.* He was able to show that dolichocephaly and brachycephaly are to be found all the world over, except in Africa; but he was not able, any more than those who have taken up the question subsequently have proved able, to explain the real purport of the phenomenon or how it has arisen. This difficulty of arriving at the explanation of the ultimate cause of a phenomenon is, as we know, characteristic in fact of all the phenomena we meet with in Nature. Research enables us to reveal their existence, to describe and register them, but it is rare indeed that we are enabled to discover their origin and cause. That is the case, too, with the majority of the other race-characters. We are aware that the negro's skin is black, the Indian's red, the Mongolian's yellow, and the European's more or less white. But has anyone ever been able to demonstrate *why* the colouring is so varied in the skins of these different races? The same difficulty arises when an explanation is required of the differences in the colour and character of the hair, the colour of the iris, the stature or length of the body, etc. It is therefore essential for us to rest content with having established the fact, that dolichocephaly and brachycephaly are to be found disseminated throughout Europe, Asia, Polynesia, and America, not, however, merely promiscuously without rule, but existing as a criterion of race for the different peoples inhabiting those regions of the globe.

Anders Retzius did not lay down any definite figures by way of limit to mark off dolichocephaly from brachycephaly. He had come across intermediary forms between the two varieties, and he seems to have thought it best to adopt a central point as characteristic for each. Thus, he states that the length of the head of the dolichocephali exceeds the breadth by about one-fourth of the length, *i.e.*, the length stands to the breadth in the ratio of 100 : 75, whereas the ratio for the brachycephali is 100 : 80–87, *i.e.*, the length exceeds the breadth by one-fifth to one-eighth.

From the account given by Anders Retzius we may see in general that he did not regard dolichocephaly and brachycephaly as merely a matter of measure-

ment and nothing more, but looked upon them rather as a typological character, a ratio indicative of form, possessing a very close relationship to other criteria of form, which he also described in several of his works.

That he paid attention in his researches, not only to the shape of the skull itself but also to the parts of the face, is evident from two circumstances, first, that in his classification he registers the greater or less degree with which the jaws project, their orthognathic and prognathic properties; and, second, that he gives the dimensions of the face (height of face, jugular breadth) both in his series of measurements and in his descriptions of the characters of the face.

It is not my intention, however, here to enter upon a further discussion of this phase in the history of anthropology. I have only desired to bring forward some of its salient points, seeing that they are of fundamental importance for us in seeking to arrive at a clear idea of the history of the race question, even as regards Europe alone. In accordance with the theory of Linnæus and Blumenbach it was generally supposed, as has been stated above, that the white, European, variety of the human race—Blumenbach's Caucasian variety—consisted of a *uniform group* of people more or less homogeneous among themselves. The idea put forth by Anders Retzius first directed attention to the existence of considerable *divergences of race even within the white variety, i.e., among the peoples of Europe itself.* The Swedish anatomist and anthropologist demonstrated that the skull of a Swede and that of any other representative of the same stem, the so-called Teutonic stem, differ very widely not only from those of the Lapp and the Finn but also from that of the Russian and, broadly speaking, from that of a Slav. Anders Retzius laid strong stress, consequently, upon the fact that *languages* do not afford any certain guide for determining criteria of *race.* As early as 1847 he expressed himself as follows in one of the publications that issued from his pen: "The whole of mankind belongs to *one* species; the varied types are varieties of several different grades, which, in many localities, have become hybridised one with another. In most countries more than one type of nationality is to be found naturalised; thus in many countries migrations of people have taken place, small sections of the tribes previously dwelling there still remaining distributed—though sparsely—among the more numerous new-comers. In several countries the people who thus remained adopted the language of the tribe that won its way in amongst them; that is said to have been the case in North Germany, where the population, originally Slavs, adopted German as their language in course of time, and by degrees, through acquiring familiarity with German ways and customs, became thoroughly amalgamated with the German nation. Similar conditions have produced the same results in many other regions both in the New and the Old Worlds."

There is also, he said, to be taken into consideration the influence exercised by minor immigrations of people from other countries, and the fact, too, that countries possessing a higher degree of culture often foster a considerable number of individual differences of form.

To establish for certain what is the primary form is, he added, under such circumstances, a matter that necessitates the carrying out of a great number of investigations. So far as is possible, *both living beings and the skulls of the dead* should be made the objects of examination. To be able to pronounce a verdict upon the forms, one requires to have an eye trained in prosecuting natural history research.

These statements published by Anders Retzius sixty-two years ago embody both the underlying principles and essential programme of cranio-anthropological research as it is to-day, for they are still recognised as valid and authoritative, and the way in which they are expressed could hardly be abbreviated or otherwise improved. What he asserts respecting the displacement of one language by another, and the conclusions that may be drawn from them regarding the races of men, have gradually become recognised as correct by scientists in general, in spite of the opposition of the linguists. It is evident that whole groups of people of differing nationalities have exchanged their own original languages for those of other peoples, and that, too, even in Europe. Thus, not only have bodies of people originally speaking a Slavonic language, adopted a Teutonic, but also *vice versâ;* moreover, a number of the bodies of people speaking Slavonic have presumably originally had other languages widely differing from both Slavonic and Teutonic, which, as we know, are related one to the other.

Owing to these circumstances, which at this late day hardly admit of being cleared up satisfactorily, ethnological research has been rendered exceedingly complicated and involved. There are certain signs that point to the probability of the peoples whom Anders Retzius styled Slavs, and among whom he proved the general prevalence of brachycephaly, having belonged to a race wholly different from those that spoke the Slavonic and Teutonic languages, the remnants of that race having been to a very great extent mingled (hybridised) among the peoples now speaking Slavonic and Teutonic. It has long been recognised as one of the greatest of misfortunes, so far as ethnology is concerned, that nationalities took their names from linguistic and political characteristics, and the inconvenience is far from having been removed as yet. Anthropologists several times have pointed out the state of the case, but as long as the original races cannot, with any degree of certainty, be distinguished one from another with respect to their characters, it is out of the question to bestow upon them such designations, *termini technici*, as would meet with general acceptation in the scientific world. Not until this is realised may we hope to exchange such terms as Slavonic, Germanic, etc., as distinctive names of the various races, for more exact physico-anthropological terms.

After Anders Retzius, in 1842, had in this way established the fact, that the form of the skull of Swedes and of the Germanic peoples cognate with them differed in essential particulars from that of the Russians and the Slavonic peoples cognate with them, he proceeded, step by step, to show that dolichocephaly and brachycephaly were to be found to a greater or less extent in several other European countries. In an essay published in 1847 he writes: "From what has

been said it will be clear that it does not suffice to say that a cranium belonged to a Frenchman, an Englishman, a Russian, etc. France is inhabited by Basques, Germans (Teutons), Normans, several different Celtic tribes, etc.; the state of things in England is approximately the same, and the number of the varied tribes of people in Russia is still larger." In another paper, published in the same year, he reports having been in a position, during a stay in France and England, to obtain some data regarding the shape of the crania of the inhabitants of those countries. He found three varying shapes to be prevalent, viz., a round one in the south of France, and in some localities in Scotland and Ireland a long oval shape, which he regarded as being the Celtic variety, and a shorter oval, which is the Norman and cognate with the German (Teutonic). I do not, however, propose to enter upon a detailed description of his results in this department of his research work, but will content myself with citing one or two passages from his writings published towards the close of his life, more especially the following, which occurs in Joh. Müller's *Archiv* for the year 1858.

He says "Bereits vor längerer Zeit, hatte ich Grund anzunehmen, dass *die brachycephalische Form in gewissen Theilen der Schweiz vorkomme*, aber in diesem Sommer (1857) während einer Reise durch *Bayern, Würtemberg, Baden und die Schweiz* bin ich *überzeugt worden, dass diese Schädelform die vorherrschende in allen diesen Ländern ist.*"

Another communication, which did not appear until after his death, contains this remarkable passage, in the form of a note relative to the same treatise :—

"Since the above was published, I have been able to examine a considerable number of crania in Tuscany, Lombardy, Piedmont, the Tyrol and Switzerland, and have come to the conclusion that the races of men prevailing in those countries are black-haired brachycephali. That is also the case with the majority of those living in Bavaria, Baden and Würtemberg. In France the Basques have the same shape of cranium. In Saxony and Austria this shape is very general and the population in these countries is probably of Slavonic extraction."

I desired again to repeat these quotations, for they contain the very germ of one of the most important discoveries made in anthropology during the whole of the last century: the revelation of the prevalence of brachycephaly in the population of Central Europe, *i.e.*, among a people that has recently been usually named the Alpine race, whose territory to the south abuts on the area inhabited by the long-headed Teutons proper, and which adjoins in the west the habitat of the brachycephalic population of France, and in the east that of Austria and Russia.

Anders Retzius, the Swedish anatomist and anthropologist, must consequently be credited with having, half a century ago, discovered dolichocephaly to be markedly prevalent among the peoples of Northern Europe, *i.e.*, the Teutons, and brachycephaly, on the other hand, to be markedly prevalent among the people living in the whole of Southern Germany (Baden, Würtemberg, Bavaria), Switzerland, North Italy, the Tyrol, Austria, Greece, and also France (especially towards the south). These facts are found graphically recorded on the *chart, showing the extension of*

dolichocephaly and brachycephaly, which he published in 1860, shortly before his death, and which I have reprinted on p. 22 of my work, *Crania Suecica Antiqua*. When we are reminded that in the same chart he makes it clear how widely dolichocephaly prevails in Spain and the southern portions of Italy, we shall realise that his treatment of the subject really brought out the *essential elements of all that we know at present about this problem*. That is to say, the exhaustive and very careful investigations that anthropologists have carried out, since Anders Retzius' death, have confirmed and corroborated the theories which he enunciated half a century ago. One might remark that it was upon the basis of one single character, viz., the index of length and breadth of cranium, that Anders Retzius formulated this theory of his. This is on the whole true, for, in his writings, he refers almost solely to the shape of the head, the colour of the skin being mentioned only exceptionally. He alludes to the fairness or blondness of the Swedes, and, in the quotation from the year 1858 just cited, he says that the tribes prevailing in Tuscany, Lombardy, Piedmont, the Tyrol and Switzerland are *black-haired* brachycephali, but otherwise he touches upon neither the colour of the hair and the eyes, nor the stature and other measurements of the body. But the craniological character to which he directed his investigations in particular, viz., the relation of length of head to breadth, has proved, in spite of all efforts made to minimise its value, to be one of the most important factors in anthropological research.[1]

This character was moreover the divining-rod with which he discovered and was enabled to prove that Blumenbach's Caucasian variety is not homogeneous, but includes within itself different races or branches of the same race. This was also acknowledged very soon after Anders Retzius' death by Alexander Ecker, the distinguished anatomist and anthropologist, in his work entitled *Crania germaniæ meridionalis occidentalis*, published in 1865, where he says in the introduction: "Die Zeit liegt noch nicht fern hinter uns, in der man die Schädelformen der nur zur sog. Kaukasischen Rasse gerechneten Völker für nahezu gleich, jedenfalls einer näheren Untersuchang in Bezug auf etwaige Unterschiede nicht für werth hielt. Es ist unstreitig das Verdienst von *Retzius*, auf die Verschiedenheiten der Schädelform der europäischen Volkstämme aufmerksam gemacht und dieselben durch kurze, allerdings vielleicht zu kurze Bezeichnungen ausgedrückt zu haben. Heutzutage ist das Bestehen solcher Verschiedenheiten und die Wichtigkeit des Studimus derselben sowohl für die Ethnographie als die Geschichte unangefochten anerkannt."[2]

[1] The ratio of length of head to breadth is, moreover, as Pfitzner asserts, one of the most constant of the characters, the one that alters least during the period of development as the individual grows older.

[2] That Anders Retzius was guilty at times of making mistakes, largely if not entirely by reason of insufficient or misleading material, we are perfectly willing to admit; thus, he was evidently mistaken in his verdict upon the shape of the cranium of the so-called Celts; on the other hand, with reference to the shape of the cranium of the Basques, which he put down as brachycephalic, thereby calling forth a severe reprimand from Broca after his death, it has been

I have dwelt at some length upon these points in the earlier history of physical anthropology, and especially of craniology, because they really contain the essence of the whole development of that branch of science, during the past half-century, regarding the question of the races of Europe, and particularly regarding the question I have selected for my lecture, viz., "The Anthropology of the Northern Race-branch of Europe." The phase in the history of anthropology here depicted appears, moreover, as above hinted, to have been, comparatively speaking, overlooked and neglected in recent times; one will too often find in recent literature an account of it devoid of real knowledge, yea, even partial and unjust.

It would now be interesting to pursue this sketch of the history of the development of our knowledge respecting the physical anthropology of the European peoples in the same manner as above, but the time allotted for this lecture does not permit of that being done.

Moreover, Professor Ripley in his detailed work, *The Races of Europe*, and Dr. Deniker in his comprehensive papers (on the "Cephalic Index" and the "Stature of the Body") as well as in his Huxley Memorial Lecture delivered in 1904, have already depicted the progress made during the last 50 years. I shall, therefore, only seek to bring out a few of the most salient points in very brief outline.

In that period of anthropological research it is possible to discern certain main currents and epochs:—

First, Carl Ernst von Baer, the great Russian natural scientist, after having put on record his appreciation of the impetus that Anders Retzius had given to this particular branch of research, craniology, devoted himself earnestly to its pursuit. Then the German anatomists, Hermann Welcker, Rudolph Virchow, Alexander Ecker, Julius Kollmann, Johannes Ranke and others, followed his example, and, thanks to their energy, more and more attention was paid to the subject. At about the same time the study was taken up with ever-increasing vigour and enthusiasm in France by Broca, de Quatrefages and Hamy, Topinard, Collignon, Bertillon, Manouvrier, Verneau and others, and also in England by Beddoe, Huxley, Thurnam and Davis, Busk, Cleland, Sir William Turner, Sir William Flower and others.

The formation of ethnological and anthropological societies also infused fresh life and interest into this line of investigation.

subsequently shown that Retzius was considerably nearer the true solution than Broca himself. One might, furthermore, criticise his methods, inasmuch as he did not base his conclusions upon measurements of extensive series of crania, nor upon the measurement of large numbers of living persons, though he fully saw and appreciated the desirability of proceeding in that way.

The further criticism might be brought against him that besides parts and features of the body, *e.g.*, colour of hair, eyes, and skin, he only makes use for his investigations of the cranium, and leaves out of account the rest of the skeleton. It should, however, be remembered, that, at the time when he took up this branch of study, he was already somewhat advanced in life, and could only devote such time to it as he could spare from his multitudinous occupations as a teacher of anatomy, physiology, etc., and as head of a large medical college, in addition to other calls and duties. This explains somewhat the limitation to which his activity in anthropology was necessarily subjected.

Welcker, Virchow, Broca and Huxley endeavoured in the first place to improve the methods of inquiry in such a way as to render craniological investigation more systematic and accurate, by discovering some more rational way of applying the system of measurements and by determining upon what basis the system itself should rest. Virchow and Huxley endeavoured to fix upon a determinate axis in the basal section of the cranium from which measurements might be consistently made. Welcker busied himself with trying to bring to light the laws of the formation and structure of the cranium by following out the development of the skull from the age of infancy onwards. Virchow sought to elucidate the differences in shape of various crania from a pathological point of view, more especially such as arise from a premature coalescing of the sutures. Broca, who devoted his energy and inventiveness to anthropology with the utmost zeal and enthusiasm, devised new measuring instruments and tried to solve by their means a whole series of those problems that present themselves to an inquirer in this field of knowledge. Both he and Welcker, though independently of each other, found it necessary to introduce a definite midway group between the Dolichocephali and he Brachycephali; Broca named his middle group Mesaticephali (Mesocephali), and Welcker called his Orthocephali, the latter embracing the large series of all those with indices between 72 and 80. They also determined the boundary-lines for the indices, marking off the three classes one from another. Broca, however, went still further, for between each pair of these three (1 and 2, 2 and 3), he set a subordinate class, so that his system was as follows:—

Dolichocephali	with cranial index 75 or below.			
Subdolichocephali	„	„	„	75·01 to 77·77
Mesaticephali	„	„	„	77·78 to 80.
Subbrachycephali	„	„	„	80·01 to 83·33.
Brachycephali	„	„	„	83·34 and above.

* I have mentioned this in order to show that, owing to their subdividing the index-scale in this way, the theory enunciated by Anders Retzius regarding the signification of dolichocephali and brachycephali was wholly distorted and misapplied. Those names represented in his conception typical shapes of the cranium subject to expansive limits in each direction, so that all such variations in the shape of the head as are constantly to be observed among various peoples (latitude of variation) might find a place in one or other of the type groups.

Broca's minute subdivision reduced the terms to mere arithmetical conceptions with their fixed places on the scale. Thus, there would be no less than three of these subdivisions, Dolichocephali, Subdolichocephali and Mesaticephali, in which the long-headed Swedish people would be classed. Supposing terms for such minutely distinguished subdivision are necessary, other names should have been chosen so as to avoid confusion with the terms already in use in a different sense. As above arranged, they have caused no little misunderstanding in people's minds relative to this subject, and have made the whole study of the question complicated

and obscure. Some anthropologists accepted Broca's subdivision, others only adopted his middle group (mesocephaly), while a third rejected that too and declared their adherence to the original two, dolichocephaly and brachycephaly, with the index number 80 as the boundary-between them. I myself belong to the last-mentioned section.

Also, Huxley proposed a further subdivision of the forms of the crania by indices. He, however, retained brachycephaly and dolichocephaly as main divisions, with the index 80 as the boundary-mark between them, but subdivided the former into two, the latter into four sections, an arrangement which commends itself to me as greatly superior to Broca's. Huxley's scheme of subdivision is as follows:—

Index of 80 or upwards	= I. *Brachycephaly*, round skulls.	
„ „ 85 „ „	= (*a*) Brachistocephali.	
Index below 85, of or above 80	= (*b*) Eurycephali.	
„ „ 80	= *Dolichocephali*, long skulls.	
„ „ 80, of or above 77	= (*a*) Subbrachycephali	oval skulls
„ „ 77, „ „ 74	= (*b*) Orthocephali	oval skulls
„ „ 74, „ „ 71	= (*c*) Mesocephali	oval skulls
„ „ 71, „ „	= (*d*) Mecistocephali, oblong skulls.	

Welcker pointed out the importance of the ratio of the height of the cranium to its breadth, and drew up a classification of all the forms of the cranium to accord with the index that shows the ratio of height to breadth. He made out five groups, viz., Hypsistenocephali, Hypsibrachycephali, Orthocephali, Platystenocephali, Platybrachycephali.

As regards the features of the face, Welcker established a third group between prognathi and orthognathi, viz., opistognathi, and tried to determine limits for the three groups. Efforts were also made to find out a normal position, a fixed horizontal line for the cranium.

The length of the face from the root of the nose to the chin and its breadth under the eyebrows had, as we know, been measured by Anders Retzius and by his followers; they had also registered the measurements of the lower jaw. Those measurements were now, however, taken up with much greater eagerness and their indices were calculated. It was on those measurements that Julius Kollmann based his five types:—Leptoprosopic Dolichocephali, Chamaeprosopic Dolichocephali, Chamaeprosopic Mesocephali, Chamaeprosopic Brachycephali and Leptoprosopic Brachycephali.

It would take me too long to report here upon all the questions and problems that were brought forward, discussed and investigated in the domain of anthropological craniology during the last four decades of the last century. What must, however, be mentioned in this place is that the measuring of crania proceeded on a large scale, and often on the basis of very complicated systems; the crania measured were partly of people living in recent times, partly of those who died long ago. Remnants of skeletons from the Stone, Bronze and Iron ages,

and also from the early part of the Christian era, had been found in ancient graves and were carefully preserved. Davis and Thurnam in England led the way by publishing their great work, *Crania Britannica*, in which they proved, among other things, that in the prehistoric graves there were to be found brachycephali and dolichocephali, the latter apparently in the more ancient of the graves. Virchow examined and described the crania discovered in the ancient graves in Denmark; Ecker those found in Southern Germany, etc. Several interesting results were arrived at, and as a whole the statements of Anders Retzius respecting the distribution of dolichocephali and brachycephali in modern times were confirmed; but it appears to be clear from them that the distribution of race elements was in many places different in earlier prehistoric times from what it is now; thus, for instance, the dolichocephali were much more prevalent in Southern Germany formerly than now.

But in addition to the investigation of crania on a large scale, other physico-anthropological characters were studied. I may here specially mention the inquiries started regarding the colour of *hair*, *skin* and *eyes*. Concerning this important chapter of anthropology, one of the authorities on the subject, Dr. John Beddoe, gave an excellent report in his Huxley Lecture in 1905, and I therefore beg to refer to that lecture of Dr. Beddoe with the special remark that he is one of the foremost pioneers in this particular line of investigation. It is also a pleasing duty to acknowledge that the grand anthropologist, to whose memory these lectures are devoted, Thomas Huxley himself, was very much interested in this anthropological character and often remarked upon its great significance. It was one of the leading principles on which he founded his division of the races of men, and it will certainly always occupy a prominent place in the system.

There remains, however, one more criterion of race to be mentioned, *stature* or *length of body*. This has, indeed, for a long time past been a point to which anthropologists have been attentive, and in the tabulated measurements of the recruits for the army they have been provided with material ready to hand for purposes of investigation. It was not, however, until towards the close of last century, when several special inquiries on a large scale were carried out in different European countries, that this character came by its rights and received due attention and notice.

Thanks to the systematic investigations made by fully competent persons regarding the most important anthropological characters of *large army contingents*, the distribution and numerical amount of these several characters have at last been made known for some of the nations of Europe, especially by Dr. Otto Ammon in Baden in 1886–1899 and by Dr. Rid. Livi in 1896–1905. A brief report of the results of all these investigations was given in Dr. Deniker's Huxley Memorial Lecture in 1904.

There are five principal characters that were made the subject of inquiry :—

1. *The length and breadth of the head*, and consequently the length and breadth index;

2. *The form of the face;*
3. *The stature or length of the body;*
4. *The colour of the hair of the head;*
5. *The colour of the iris.*

In conjunction with a number of more or less exhaustive investigations into certain of these characters for the same and other countries in Europe, such a general knowledge of the race-characters of the European nations has been obtained, that it has been considered possible to draw some general conclusions. Professor Ripley, of Harvard University, and Dr. Deniker, of Paris, have been specially occupied with summarising the general results of investigations in this department. The former gives three separate races called by him: "The Teutonic Race," "The Alpine Race," and "The Mediterranean Race." Of these the first two coincide with Anders Retzius' Dolichocephalic Germanic Race and Brachycephalic Central-European (Slavonic and Rhætian) Race. Dr. Deniker, on the other hand, went further in his subdivision of races; besides the three named he added some others, but has on different occasions arrived at somewhat different results. In his last publication, however, in the Huxley Memorial Lecture of 1904, Dr. Deniker fixed the number of European races at six, viz.—

1. *La Race blonde dolichocéphale, de très grande taille* (*La Race nordique*).
2. *La Race blonde, sous-brachycéphale, de petite taille* (*La Race orientale*).
3. *La Race brune, dolichocéphale, de petite taille* (*La Race ibéro-insulaire ou méditerranéenne*).
4. *La Race brune, très brachycéphale de petite taille* (*La Race cévenole ou occidentale*).
5. *La Race brune, sous-dolichocéphale, de grande taille* (*La Race Littorale ou Atlanto-méditerranéenne*).
6. *La Race brune brachycéphale de grande taille* (*La Race Adriatique ou Dinarique*).

Of these six races, two (Nos. 1 and 3) correspond roughly to the races defined by Ripley and other writers as the Northern and the Mediterranean. Their Alpine race on the other hand appears to be subdivided by Dr. Deniker into three (Nos. 2, 4 and 6), while No. 5 would seem to be an offshoot from the Mediterranean race of other writers. It is still very difficult to determine whether Dr. Deniker's last classification has yet reached the truth; a great deal of critical investigation on a comprehensive scale is still requisite, especially in the countries bordering on the Mediterranean Sea and Russia before a satisfactory answer can be given. But for anyone who has observed, for instance, the remarkably tall brachycephalic Montenegrins, it cannot—I agree with Dr. Deniker—but be repugnant to class that race with the short-statured Alpine race. As for the European population of Russia, a still more thorough inquiry is necessary before we are able to know their essential

race-characters. The first problem there that presses for solution is whether the dark-haired, short-statured, brachycephalic elements really appertain to the same sub-variety as the Alpine race of Central Europe or not. Until a thorough investigation has made matters clearer, it seems to me to be wisest only to admit of the existence of such races as have really been proved, and to leave the classification of the remaining to the future.

The following may, however, be admitted as surely existing :—

1. *The Northern European Dolichocephalic, Blue-eyed Tall Race* = Anders Retzius' Dolichocephalic Germanic type, which has latterly been designated by several writers (Wilser a.o.) *Homo Europæus* (the term Linnæus used), and which is now often termed the Northern Race (La race nordique, Nordische Rasse).

2. *The Middle European Brachycephalic, Dark-haired, Dark-eyed, Short-statured Race,* probably closely related to the similar population in the eastern portions of Europe (Anders Retzius' Slavonic and Rhætian people). This race has been designated recently *Homo Alpinus* (Linnæus' term); there may be some justification for this term in the fact of a large section of the race being resident in the Alpine regions of Southern and Central Europe. But it should not be forgotten that this race during the lapse of centuries has extended its habitat to a considerable part of France and even to a large portion of Central and Northern Germany. Linnæus certainly did not mean this race by his term "Homo Alpinus," a fact already stated above.

3. *The South-European Dolichocephalic, Dark-haired, Dark-eyed, Short-statured Race,* called *Homo Mediterraneus* (Sergi, Ripley, Wilser, and others), which may possibly embrace variations of distinct character in the various Mediterranean countries.

To name only the first of these three races *Europæus*, as appears often to be the fashion now-a-days, seems to be very strange, since the other two great races, too, have inhabited Europe from times immemorial, and it is by no means possible of proof that they originated in other Continents and migrated into Europe subsequently. I consider, moreover, that it is an entirely incorrect use of the nomenclature, established once for all for zoology, to call these races "Homo Europæus," "Homo Alpinus," "Homo Mediterraneus," as is so often done in modern anthropological literature. This leads to a confusion of our ideas about *species.* They can, of course, only be regarded as variations of one and the same species, Homo sapiens, and in reality only as sub-variations of a variety, viz., the so-called white race of men. It is unfortunate that the notions, *species, variety,* and *race,* have not been more definitely fixed in value as regards the races of mankind. The majority of anthropologists are probably of the same opinion as Linnæus, that the living races of mankind at the present day are all to be referred to one species, *Homo sapiens* Lin., and that their variant representatives are to be regarded as varieties of the species, even though very weighty reasons might be alleged for regarding some of these variations as *species* themselves; this question has now lost much of its significance since the triumphs of the theory of descent, but it is of

importance for the system and for the formation of terms. As regards the population of our own continent and the problems concerning them, it is of no great significance whether the white man, the European, is put down as a particular *species* or as a variety. But it is of real importance that its *subsections* should not be put down as separate *species*. For my own part, I am at present most inclined to agree with Linnæus and Blumenbach in regarding the great racial groups of the human species as varieties, though it must be admitted that the Australian, the Negro, and the American differ very widely from the European. There are to be found, however, remarkable transitional (intermediary) forms to bridge the gulf between the peoples of Asia and Europe, and there also exist similar transitional forms uniting the people of Asia with those of America and a portion of Polynesia. But if the term *variety* is to be preserved for the various large race-groups, we require a suitable term for the sub-sections under *Varietas*. Here to use the word *race* would not be the right thing, since the terms *race* and *variety* have long been employed as synonyms also for the *Varietates* of the human species. It seems to me, therefore, to be indicated that these sub-sections of the varieties should be designated as *sub-varieties* or *sub-races* (race-branches). This would mean for the population of Europe: *Varietas Europaea*, with three *sub-varieties*, viz., the *North European*, the *Middle European* and the *South European*, deriving their names from the respective main centres of distribution. Besides those there exist, as we know, two other race-branches among the population of Northern Europe, the Lapps and the Finns, who it is customary to assume to have immigrated from Asia, the proof of this still being far from absolute.

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It has, however, been recently proved with more and more certainty that Europe was formerly the home of another population very different from the race-branches above named, the so-called *Neanderthal race*. The finds of crania and skeletons at Neanderthal, Spy, Gibraltar, Krapina, and more recently at Le Moustier, La Chapelle-aux-Saints and Heidelberg, constitute, even though they are relatively few in number, a striking proof of this prehistoric race having been formerly widely spread throughout our Continent, though probably never very numerous. The question has been mooted, whether descendants of this race may still be found among the European peoples of the present day, since some of the cranial characters belonging to that race are still occasionally to be met; the opinions on this subject have differed very much indeed. During the last decade Professor G. Schwalbe has succeeded in showing, as the result of ingenious, scientifically exact, and methodical investigations of some of the ancient crania that have been found, what the peculiar and primitive race-characters of this primeval people were, and he has come to the conclusion that the race must be extinct. Whether the race ought to be regarded as a particular *species* or as a *variety* depends upon whether the races of mankind of low standard, that still are existing, are to be looked upon as species or varieties. According to my opinion, the Neanderthal

race is a special variety of low standard,[1] which Huxley himself compared, as regards characters, with the still living aboriginal population of Australia. We do not, unfortunately, know anything about the colour of the skin of the Neanderthal race nor about the hair on their bodies, etc.; consequently a closer comparison is out of the question. From a scientific point of view a serious protest must be lodged against a number of fantastic and sensational attempts at reconstructing the external appearance of the Neanderthal race, which have been made with clay and colours by a number of irresponsible artists, intending to arouse interest among the uncritical public, and also against the journalistic efforts of certain writers who wholly lack the training necessary for giving an objective and critical account of the matter. It is by no means proved that the Neanderthal race occupied so very low a position on the scale of development from brute to man, either as regards its outward appearance or its psychical character, as certain fantastic depicters of it have tried to make out. Professor Klaatsch, who was the first to examine closely the other bones of the Neanderthal skeleton and to determine their race-characters, and who, in order to pursue Huxley's idea of the similarity between this race and the present day Australians, made anthropological researches in Australia for three years, has pronounced as his opinion that essential points of similarity are to be found in structure of the cranium and of the skeleton between the Australians and the Neanderthal race, but that they are to be regarded as separate branches of the common stem and that they have arrived at approximately the same stage of development. Professor Klaatsch being convinced that, with regard to the Australians, they do not occupy so low a position in psychical endowment as is generally supposed, standing in fact pretty high in several respects, especially in their faculty of observation and in their general standard of life, he therefore considers, that the same might have been the case with the people of the Neanderthal race.

I am not going, as I already mentioned in the introductory words of this lecture, to enter further upon a discussion of these highly interesting questions, tempting as it might be to do so. I have only touched upon the subject in order to point out that the Neanderthal race of Europe is not to be regarded as "the missing

[1] However, not content with having registered a special *Homo neanderthalensis or primigenius*, the nature of which as a separate species is still rather doubtful, some authors have gone further, for almost every find of palæolithic skeletons has been designated as a special kind of "Homo," such as "Homo Spyensis," "Homo Krapinensis," and, quite recently, "Homo Mousteriensis." That this is not correct and must be protested against, should be patent to every anthropologist and zoologist, the more so, since all the "Homos" mentioned are reckoned by most authors as belonging to one and the same species or variety. Instead of being termed "Homo," they ought to be called "Individuum Spyense," etc., and these "Individua" ought then all to be referred to one and the same "species" (*Homo neanderthalensis* or *primigenius*), or to one and the same "variety." The question of species or variety with reference to them cannot well be solved until new finds have been made, showing how great its variations were. The choice of the name "Homo primigenius" for these remains of skeletons seems somewhat premature, as they probably belonged to a lateral branch of the main stem and were preceded by other forms which would rather have merited that name.

link," for it was considerably more closely connected with the existing races than was once supposed to be the case.

It is even possible that the races that are now in existence, especially the North European, existed contemporaneously with the Neanderthal race, and displayed the features that are still characteristic of them at the present day. At all events the finds of crania belonging to the Cro-Magnon type point to that particular race having been, in a geological sense, developed in its essentials not so very long after the period to which the Neanderthal skeletons belong.

The investigations concerning the stages of development of the human species that have been made by Professor Schwalbe primarily, but also by others, as a consequence of the prehistoric finds that have been brought to light in Europe, constitute in themselves one of the most important contributions to anthropology that have been made in recent times. I cannot suppress a note of regret that Professor Huxley did not live long enough to witness this advance in the special branch of science here under discussion, for he had foreseen it and was instrumental in preparing the way for it. Science must continue to proceed, however, cautiously upon her pathway, and be constantly on her guard against premature conclusions. That principle was one that the great Huxley himself observed. In his excellent essay entitled "On Some Fossil Remains of Man," which appeared in January, 1863, he remarks at the close: "In conclusion I may say, that the fossil remains of Man hitherto discovered, do not seem to me to take us appreciably nearer to that lower pithecoid form, by the modification of which he has, probably, become what he is."

He adds too, in a note, a pronouncement of his own in another place, relative to the Neanderthal race as follows: "Inasmuch as a complete series of gradations can be found, among recent human skulls, between it and the best developed forms, there is no ground for separating its possessor specifically, still less generically, from *Homo sapiens*." It is interesting to compare with this a statement made by Professor Marcellin Boule in his preliminary account of the new find of a skeleton of the Neanderthal race, the one discovered in 1908 at La Chapelle-aux-Saints.

"Tout cela nous prouve que les origines humaines sont plus lointaines encore qu'on ne le suppose généralement. Des découvertes aussi importantes que celle de La Chapelle-aux-Saints nous apportent, certes, quelques lueurs nouvelles; mais il faut avouer qu'elles reculent le probleme plutot qu'elles ne le résolvent. Et c'est tout de même un précieux résultat."

As yet no genuinely transitional forms between the crania of the Neanderthal race and those of the race branches in Europe at the present day have been discovered in the prehistoric finds; the finds, however, of those prehistoric human skeletons have been so few in number, that there does not exist anything like enough material for definite conclusions to be drawn concerning them. The trend of opinion, however, as has already been stated, favours the assumption that the real Neanderthal race became extinct long ago, and that it yielded place to its rival,

the "Cro-Magnon race" and its descendants, and to the other racial elements to be found in Europe now. The relics of the Cro-Magnon race hitherto found, point to our present North European dolichocephalic race branch having descended in direct line from that "race." It is consequently a matter for regret that a greater number of well-preserved crania have not been found to enable us to form a more complete and comprehensive acquaintance with the racial characters of this prehistoric people.

From the periods immediately succeeding that one, the Neolithic, the Bronze, and especially the Iron age, there have been collected from the graves in France, England, Germany, Russia, Denmark and Sweden a large number of crania and portions of skeletons. I have already published a survey of the investigations made on the crania found among those collections in the second chapter of my *Crania Suecica Antiqua* (1900, in German), to which I may beg to refer.

Here it must suffice to mention that both dolichocephalic and brachycephalic crania have been found in most of the countries named, in the graves of the Neolithic period, and that they vary in proportion one to another, though in general dolichocephaly is more preponderating. Thus Salmon discovered that, out of 688 crania belonging to the Neolithic period, found in France, no fewer than 397 were dolichocephalic, 145 being mesocephalic (the limiting index-numbers being 77 and 80) and only 146 brachycephalic. E. Pittard asserts that in Switzerland two races can be traced, succeeding each other in the Neolithic period: first, a race of short-statured brachycephali, who appear to have come to Western Europe from the north-east and south-east, and seem partly to have superseded the dolichocephali formerly to be found there, and partly to have intermingled with them, thereby producing mixed races; towards the close of the Neolithic period a fresh immigration appears to have taken place by a dolichocephalic and leptoprosopic race, while at the close of the Bronze age a fresh brachycephalic race appeared on the scene, which had become superior in numbers to the others by the commencement of the Iron age. The researches of His and Rütimeyer, in 1864, went to confirm the discovery made first by Anders Retzius and subsequently by von Baer, that at the present day by far the largest proportion (roughly three-fourths) of the population of Switzerland is brachycephalic.

It has already been remarked, that dolichocephali were found in preponderating numbers in the graves of earlier times in Germany, especially in the so-called "Reihengräber"; that was particularly the case in districts (*e.g.*, Bavaria, Würtemberg, and Baden) where the population of to-day is chiefly brachycephalic. This would appear to denote that the original Teutonic (Germanic) population of these parts of Germany has been displaced by the brachycephalic race-elements now resident there. Attempts, it is true, were made in certain quarters to explain this alteration in the character of the population by the assumption that the shape of the cranium had actually changed in the same race of people from a dolichocephalic type of a low grade of civilisation to a brachycephalic type of a higher grade, but that theory appears now to have been altogether relinquished.

As regards Russia, Anatole Bogdanoff has proved that the whole of Central and Southern Asia was formerly inhabited by a highly dolichocephalic race, which was more homogeneous than those in the European countries, and increasingly so the further back in time it is traced. It was not until a period not very remote from our own, he says, that brachycephaly began to become noticeable and to increase in amount to such an extent, that in our days it has largely superseded the dolichocephalic element. The data from the other countries in Eastern Europe tell the same tale.

From these finds, therefore, and the considerations to which they give rise, it seems as though we were entitled to conclude that for a long time past a shifting of racial elements has been proceeding on the continent of Europe, the brachycephali having driven out more and more the dolichocephali who were there before them. The latter can scarcely have consisted of any other people than the Teutonic (Germanic), whom it is best to term now the North European race branch. It is also to be taken for granted that the brachycephalic population, which by degrees usurped domiciliary rights in the country, belonged to that dark-haired brachycephalic race branch, the Middle European, which in our times is by far the preponderating one in those countries. Where that brachycephalic people may have emanated from is, as above said, up to the present wholly wrapped in mystery. It has been customary to trace it to Asia and to designate it as Mongoloid, but there are no real proofs of that supposition being correct. It is presumably more likely that its home was some tolerably limited region in Central or South-Eastern Europe, but that by rapid increase in numbers and owing to hardy qualities called forth in it, in accordance with the laws of the Darwinian theory, by the struggle for existence, it gradually spread, without having to carry on any real strife, further and further afield over the adjacent tracts of country, supplanting thereby the dolichocephalic (Teutonic) population already indigenous there. Lapouge, the French anthropologist, has characterised, as it appears to me in a trenchant manner, the differing psychical qualities of the two contending races in question. I regret that the shortness of the time at my disposal precludes my quoting the whole of what he says; the gist of it is, however, that the *dolichocephalic* individual of the North European race has considerable wants and always seeks to satisfy them, that he understands better how to gain riches than to keep them, that it is "easy come and easy go" with him. An adventurer by temperament, he hazards everything. He wages warfare for the sake of it, but not without some thought of his own betterment. His intelligence oscillates between narrowness and brilliance. The whole earth is his fatherland. The *brachycephalic* individual of the Central European race is, on the other hand, temperate, laborious, and economical. He is not short of courage, but he lacks warlike propensities. He is fond of farming and of the piece of land he has inherited. Though not wanting in cleverness he is seldom possessed of real talent. His aims are not lofty, but he works patiently to attain them. Distrustful by nature, even of progress, he is at bottom conservative; in religion he leans towards Catholicism, in politics he has only one aspiration: to

secure State support. He is alive to the interests of himself and his family, and he seeks to promote them.

That characterisation is doubtless in all essentials perfectly correct. The merits and demerits of the two race branches are easily recognisable. As regards the North European race branch, the description fits the Scandinavian peoples excellently, both for prehistoric and present times. That is proved by the warlike venturesomeness and the piratical expeditions of the Normans and the Vikings of an earlier day, and also by the armed mercantile journeys of the Swedes and the Varangians to Russia and Byzantium in the ninth century, when they subjugated nations, founded kingdoms, and became soldiers of fortune for the sake of fighting, plundering, and carrying on trade in slaves.[1]

There are still to be seen a good many traces of that national temperament in the Scandinavian peoples. For my own part, I have for a long time become more and more afraid that that racial element will not be found to be suited for the conditions brought about by the direction in which civilisation is developing. The North European race branch cannot properly adapt itself to the demands made upon it by industrialism. It desires a freer, less constrained life, it lacks the endurance necessary for carrying on a uniform kind of labour, it has not the patience to stand chained to machinery day after day, year in year out, and to work like a machine itself. It requires high wages for a moderate amount of work and short hours, that it may have time to indulge in pleasure and enjoyment.

The brachycephalic individual of Middle Europe, on the other hand, seems to be far better suited for the demands of industrial life; he is satisfied with a little, is possessed of patience and endurance even when things are dull and dreary, and his work tiring and little remunerative; he is not so much addicted to expensive forms of recreation, but lays by money for his family and for old age. We have not as yet any statistics based upon anthropological research into the racial characters of industrial operatives, but, to judge by the information I have received privately, I should be inclined to conclude that wherever the two races are both available, it is the dark-haired, small statured brachycephali who are preponderatingly employed in industrial occupations. That is so especially in America. From Sweden, my own native country, emigrants continue to set sail in large numbers to certain of the North American States and to Canada; they less often take up work, however, in the service of industrialism. That is said to be the case too with emigrants from England, Denmark, and Norway.

There are two reasons for my stating these facts. First, in order to point out that there may lie in the circumstances to which I have called attention, a very real danger of the North European dolichocephalic race branch not being able to hold its own. Just as it has been ousted during the past thousand years from

[1] *Cf. inter alia* Professor R. Weinberg's interesting disquisition on this point, in *Polit. Anthropol. Revue*, III Jahrg., "Rassen und Herkunft des russischen Volkes."

Germany and other countries in Central and Eastern Europe by the dark-haired small-statured brachycephali, it will probably have to yield place here too, and be reduced in numbers, perhaps by degrees disappear entirely out of the fatherland of its ancestors and itself, by reason of the ever-increasing might and power of industrialism with which it seems ill-fitted to cope successfully in the long run. The prospect is depressing, it cannot be denied, but the development of things in the world is not seldom harsh and unmerciful.

Doctor Roese in his work *Beiträge zur europäischen Rassenkunde* of the year 1906 seems to have come to similar conclusions: "Leider ist," says he, "der vorwiegend nordische Bestandteil des deutschen Volkes im langsamen Aussterben begriffen. Je rascher die neuzeitige Industrie-Entwicklung fortschreitet, und je länger sie anhält, um so rascher wird der nordische Bestandteil des deutschen Volkes sich vermindern,—falls nicht rechtzeitig auf Abhilfe gesonnen wird."

Latterly the attempt has been made, especially by German writers, to prove that the great advances which have been achieved in civilisation, in science, in art, and in literature, that discoveries and inventions, too, chiefly owe their origin to the offspring of the Teutonic race, to blond dolichocephali, not only in Germany itself, but in France, Italy, and Spain (Woltmann and others). Supposing this were true, what would become of the progress of higher civilisation, and of art and science in the future?

It has seemed well cursorily to touch upon these matters, because they give an indication of a new point of view as regards the work and aims of anthropology, which has asserted itself in the past few years, especially in Germany, viz., the importance of anthropology politically and socially; attention has been raised to the question of how far racial characters are hereditary through the ages, and also to the relative merits of the various race-elements, their various degrees of intellectual endowment, etc., as well as to the problem of the extent to which interference on the part of the State or society might be able to improve the races, or at all events prevent their degeneration.

It is not possible here to give a review of this, in many respects very interesting, movement in the science of anthropology, tending to explain the psychology and the inner characters of the different races and race branches, and to find out methods for their improvement. Through the researches and ideas of Sir Francis Galton and his school in England, and the important investigations and views of Dr. Otto Ammon and his followers—I will especially mention Dr. Roese in Germany and Dr. Lapouge in France—this new movement has been raised and developed. If guided by criticism, it promises good results also for the future. This field of research is indeed most interesting, but is also very dangerous and complicated.

These are actually important and also very delicate questions with which to deal, and several immature projects have already been ejected concerning them; certain proposals that have been put forward, however, may be worthy of mature deliberation, as containing a good deal of truth, though immense and perhaps in

some degree insurmountable obstacles may prevent their being practically realised.

I desired to touch upon these modern movements, as they are intimately connected with our European race-questions, particularly with that of the dolichocephalic North European race element and its struggle for existence, *i.e.*, the question of what its chances are of being able to hold its own in the future in the struggle with the dark-haired brachycephalic, Middle European race-element.

This struggle, which has been going on during a series of centuries, silently for the most part and hardly perceptible, constitutes one of the most wonderful and interesting events in the history of the world and of humanity during the past thousand years. It is to anthropology, and above all craniology, that we owe the possibility of being able to discover its existence. If craniological research and—to cite Kollmann—Anders Retzius's discovery of dolichocephaly and brachycephaly, among the peoples of Europe, had not effected anything more, they would have accomplished not a little.

However, to be able to observe accurately the gradual moving of the race-elements, their growth and diminution, in the various countries of Europe, a thorough and extensive anthropological investigation *at fixed repeated intervals* would be required, of about the same character as those that have been carried out, on a single occasion, in a few countries, *e.g.*, Baden, Italy, and Sweden. Under such circumstances it is greatly to be regretted that the investigation that Professor Schwalbe planned on a grand scale for the whole of Germany and Austria was not realised, as a thorough and extensive inquiry regarding racial factors in those two large realms would have been extremely desirable. As far as England is concerned, the best anticipations may be entertained, inasmuch as the anthropological investigations in this country are in the hands of a competent and enlightened committee that is perfectly aware of the importance attached to their work, and who may be trusted not to shrink from overcoming whatever trouble, expenses, or other difficulties stand in their way.

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In my own country, Sweden, an anthropological investigation was carried out in 1897 and 1898, with the permission of our Government but at the expense of private persons. The investigation was carried out in the two annual contingents of recruits for our army, and comprised a total of 45,688 young men at the age of 21. 700 of these were from one cause or another, left as unsuitable for the inquiry, and there remained about 44,900 who were duly subjected to examination. The whole investigation was organised by myself in conjunction with Professor V. Hultkrantz, and was carried out by a staff of scientists and young physicians who were specially trained for the task. Among the workers Professors Hultkrantz, Carl M. Fürst, and Ivar Broman ought to be particularly mentioned.

The vast material collected was subsequently treated and elaborated under the direct guidance of myself, who had executed the inquiry in the provinces of

Dalecarlia and Westmanland, and of Professor Fürst, who had himself chosen the largest part of the inquiries, the provinces of Skåne and Blekinge. The work embodying the results of the investigation was published in 1902 under the title of *Anthropologia Suecica, Beiträge zur Anthropologie der Schweden.* It would carry me too far, however, were I to attempt here to give a survey of the contents of that book, which, moreover, are probably known in outline to all interested in the subject. I will, therefore, confine myself to quoting the final results merely, which are of special significance for a knowledge of the North European race branch.

The investigation included the following items, in addition to the place of birth of each individual (and of his parents) ; his height, when standing, and when sitting, maximum stretch of arms, maximum length and breadth of head, general shape of the face, colour of eyes and hair. The maximum length of the face (from root of nose to chin) and the bi-jugul breadth were only measured in the provinces of which I had charge (Dalecarlia and Westmanland). In the descriptive matter the measurements were dealt with by me, the colours by Professor Fürst.

The following were the principal results :—

1. The measurements of the length and breadth of the head showed that the mean for all the measurements led to the conclusion that in the whole of Sweden there were 87 per cent. dolichocephali and 13 per cent. brachycephali. This immense preponderance of dolichocephali was not evenly distributed throughout the country; it was still greater in some provinces, but less in others, though all over it was very considerable. The dolichocephali were found to be most numerous in a belt of country stretching right across from west to east in about the latitude of Stockholm, and also a little north of it. In Dalsland 95 per cent.; Södermanland nearly 95 per cent.; Dalecarlia, Härjedalen, Närke, Wästmanland 92 per cent.; Värmland 91 per cent.; Bohuslän, Öland 90 per cent., etc.; Stockholm City 88 per cent. To both the north and the south the percentage diminished somewhat. In Skåne it was 81, in Västerbotten 80, and in Lapland 76. These figures are easily explained, partly, in the more southern parts, by the immigration in the course of time of strangers of brachycephalic race type, partly by the presence in the more northerly parts of the brachycephalic Laplander population and of a considerable sprinkling of Finns. In no Swedish province, however, did the percentage of brachycephali rise above 20, 21, or 23·67.

It is thus quite right to call Sweden a domicile of dolichocephali, whereas in Southern Germany, Tyrol and Switzerland, the condition of things is exactly the reverse, the percentage of brachycephali being there approximately as large as that of dolichocephali in Sweden. That result by itself made it clear that the North European (Teutonic) race type is still preserved in Sweden to a very appreciable extent, greater indeed than anywhere else, so far as we know at present, and far more than in Germany, the ancient heritage of the Teutons.

In Norway, the neighbour of Sweden, no extensive anthropological investigation embracing the whole country has been made, but it is clear from the researches that have been carried on in scattered districts by Arbo and others, that the number of

the dolichocephali preponderates considerably, especially in the easterly parts, but that in the south-western part of the country, along the sea-border, a large percentage of brachycephaly is to be found. No complete inquiry has taken place in Denmark either, but from the investigations made here and there it would seem as though dolichocephaly may be considered as by far more prevalent; brachycephaly, and mesaticephaly with a high ratio, however, are also to be found and not very sparsely either.

If now we compare these data for the state of things existing at present with the results yielded by an examination of the crania found in the prehistoric graves, we shall see, that, so far as it is possible to judge from the finds in the graves, there were indeed already in all three Scandinavian countries during the Neolithic period—a Palæolithic period of the really old type has not been discovered here—both dolichocephali and brachycephali, but the percentage of the latter was remarkably small. Of the 42 Stone-age crania from various parts of Sweden that are described in my work, *Crania Suecica Antiqua*, 39 are of dolichocephalic type (16 of them being mesocephalic) and only 3 brachycephalic. Out of a total of 51 crania dating from the Iron age, which were discovered in graves in various parts of Sweden (the majority, however, in the island of Gotland), 47 proved to be dolichocephalic (15 mesocephalic) and as few as 4 brachycephalic.

I considered that I was entitled to draw the conclusion, as a result of my investigation of this series of prehistoric crania, that the present population of the country are the descendants in direct line of that prehistoric people, and preserve to all intents and purposes the same racial elements as they had, even though new elements may have been introduced by immigration.

Professor H. A. Nielsen's treatise of 1906 on the anthropology of the prehistoric population of Denmark, shows that out of 119 Stone-age crania 83 turned out to be dolichocephalic, *i.e.*, 70 per cent. Nearly half of the 83 were genuine dolichocephali (47 per cent. with an index of 75 or below). Among the Bronze-age crania described by Nielsen one was found to be brachycephalic (index 81) and three more showed a tendency in the same direction (index 79). Out of the 35 crania dating from the Iron age in Denmark only one was brachycephalic (index 81) and two approximately so (index 79); of the rest no less than 25 had an index of 75 or below, and were consequently dolichocephali. The whole inquiry goes to show, as Professor Nielsen points out, that the conditions have been practically the same as those prevailing in Sweden and that the types of crania are similar on the whole to the Swedish, though there was a somewhat larger admixture of brachycephali during the Stone and Bronze ages.

2. *The Length of the Body* (*Stature*).—Professor Hultkrantz worked out the average height of 232,367 recruits for the citizen army, all of about 21 years of age, at 1·6951 metres, the mean measurements differing somewhat for the different provinces; thus, the tallest men were found in the provinces of Gothenburg, Jämtland and Västernorrland, and in the cities of Stockholm and Gothenburg; the inhabitants of Gotland, too, are tall of stature, whereas in other parts of Sweden,

such as the central part of the province of Småland, the stature of the men is less, the average being lowest for the most northern part of the country and for the most southern and the south-eastern districts.

The figures quoted in *Anthropologia Suecica* are in the main confirmatory of the results Professor Hultkrantz obtained, but our tables of figures and his are not quite commensurable.[1] Our average came out a little higher than his, viz., 170·88 centimetres. The maximum average height we found in Gotland and in Härjedalen (172·74 and 172·61 respectively); then came Hälsingland and Bohuslän 172·32 and 172·14); then Jämtland, Dalsland, Medelpad, Västergötland, Stockholm, Södermanland, Öland, Gästrikland and Ångermanland, all exceeding 171 centimetres. In no province but Lapland was the average found to be less than 170 centimetres. These figures give evidence of great uniformity in reference to stature for the country as a whole.

3. I must leave out here our results concerning *length of arm and leg, stretch of arm and form of face*, and speak of the *colour characters* dealt with by Professor Fürst. To take the colour of the eyes or the iris first, it was shown that there were 66·7 per cent. of the total number with distinctly light-coloured eyes (blue or grey), and only 4·5 per cent. with definitely brown eyes; the rest, 28·8 per cent., had eyes of a mixed colour. With respect to the colour of the hair the following data were obtained; 73·3 per cent. (*i.e.*, nearly three-fourths of all the 44,900 men examined) were fair-haired (yellow or flaxen); 21·6 per cent. had brown hair, 2·3 per cent. red hair, and only 0·8 per cent. black hair. These facts do not leave any doubt possible as to the Swedish nation being the fairest of all, unless the inhabitants of Norway or Denmark might compete with the Swedes for that distinction. The Provinces of Västergötland, Bohuslän and Halland show the highest, and the northern provinces the lowest average.

4. The results of the inquiry concerning the *combinations of the various race characters are peculiarly interesting*, but time forbids me to enter upon a discussion of that here. One point, however, may be given; the combination of *genuine* dolichocephaly (index below 75), tall stature (1·70 metres and upwards), fair eyes and fair hair, was still to be found in Sweden in 10·7 per cent. of the examined contingent of the population; for Dalsland the figure was 18·3 per cent.; for Södermanland, 16·2 per cent.; for Härjedalen 16 per cent.; and for Dalecarlia, 14·7 per cent. The purest Teutonic race-element was thus to be found evidently in the interior of the country, south of its centre-point, the pure type becoming rarer towards the coasts and also northwards and southwards.

[1] That is due partly to the fact that in our investigation those rejected for shortness of stature had been already removed, and partly to the figures given by Professor Hultkrantz being calculated for the enrolment areas of the regiments instead of for the several provinces; moreover, the numerous cases of men in the regiments not hailing from that particular district were included without further ado and not discarded as they should have been. Finally, it may be remarked that the numbers in our tables are based upon measurements taken by persons specially trained for the task, and can therefore claim to be more accurate and exact. On the other hand, the contingents treated by Professor Hultkrantz were much larger.

From our inquiry the conclusion may be drawn that Sweden is inhabited by the purest population of the North European (Germanic or Teutonic) race branch to be found remaining in our time. This result has, moreover, served as a support for the theory recently enunciated and energetically defended by K. Penka and L. Wilser, that proclaims Scandinavia and the region adjacent to the southern part of the Baltic as the original home of the Teutons (Germans), in opposition to the dogma, so long accepted as incontestable, of their, or rather the Aryans, having originated in Asia, the Indo-Germanic theory of the philologists.

* * * * *

The anthropological investigations, carried out during the past two decades on large military contingents, have thus, for three countries at least, afforded a knowledge of the race characters of the present inhabitants of those three countries. As each of those inquiries has dealt with one of the three principal European types of race, a thorough acquaintance with all three has been acquired.

The excellent investigation of the inhabitants of Baden, conducted and reported by Ammon, with the active aid of L. Wilser, has given an excellent insight into the present-day constituent elements of a nation belonging to the Middle European (Alpine), dark-haired, short-statured, brachycephalic race branch. In addition to that quite a number of less elaborate investigations have been made regarding this same type of race, carried out, some earlier, some later, by Ecker, His and Rütimeyer, V. Hölder, J. Kollmann, J. Ranke, Blind (for Germany and Switzerland); by Weisbach, Toldt, Tappeiner, Zuckerkandl and others (for Austria); by Broca, Topinard, Collignon, Lapouge and others (for France); by Houze (for Belgium); by Bogdanoff, Kopernicki, Zograf, Weinberg and others (for Russia).

Livi's magnificent investigation of the population of Italy, the results of which were published in the work entitled *Anthropometria Militare*, gives an excellent anthropological survey of the Mediterranean race-element, and also of the distribution of the middle European race element in Italy. There are, besides, researches on the same subject by Nicolucci, Mantegazza, Sergi, Ruggiere and others.

Finally the North European (Germanic), blond, tall and dolichocephalic race element, through the above-mentioned anthropological inquiry in Sweden reported and published in *Anthropologia Suecica*, by myself and Fürst, has been extensively examined and described just in that very country of Europe, where it is still to be found existing in the greatest proportion and in the highest purity. This race branch has likewise been studied to a greater or less extent in other countries where it is extensively distributed, for instance in Norway, by Arbo principally, but also by Larsen, A. and H. Daae and others, in Denmark by S. Hansen, Steensby and others, in Holland by L. Bolk, in Belgium by Vanderkindere, Houze and others, and, last but not least, in England by Dr. John Beddoe, to be mentioned in the first place, that Nestor of physical anthropology, who for more than half a century with never flagging zeal and industry, has devoted himself to the solution of the complicated problems that this branch of research presents, and furthermore in that country by Beddoe's followers, Browne, Haddon, Maclean and others.

Of special merit are the summary statements of the knowledge collected by different scientists made by Dr. John Beddoe in his *Anthropological History of Europe*, Dr. J. Deniker in his extensive *Surveys and Reviews* (1899 and 1908), and also by Professor W. Z. Ripley of New York, now of Harvard, in his great comprehensive work, *The Races of Europe* (1900), and this by showing partly what knowledge we have attained and partly what is still missing.

The results hitherto obtained by these researches should not be reckoned as small when the exceedingly complicated conditions are considered, and when it is remembered that during the lapse of many thousands of years and particularly during the later centuries the different race elements of Europe have been brought into connection with each other and have been intermingled. Under such circumstances it is rather astonishing that so many important results have been obtained. With the present restless growth of communications and the movement of considerable parts of the nations it is of great importance that these primary inquiries should be carried on with energy; very soon it will be altogether too late to obtain information regarding the present and former diffusion of the race elements.

* * * * *

There are however some particular problems that constitute impediments to the advance of anthropological science and require a thorough investigation, before we are allowed to draw quite reliable conclusions about racial conditions. But these problems certainly belong to the most difficult biological questions which await solution. I shall here mention three of them. *One* of them is the following: "How large may we generally consider the *sphere of variability* (Variationsbreite) of the typical characters of the different races and race branches?" For this decides where the limit is to be placed between these races and race branches. In this respect the opinions of authors are rather different. Thus some anthropologists consider the Neanderthal type as a particular race, others as a separate species, while others again, as for instance Julius Kollmann recently, regard it as only a variation of the same race, which forms the present European race.

Another problem difficult of solution is that regarding the *laws of heredity of the racial characters of the human races.* Some anthropologists believe that the racial characters of the parents are inherited by the children partly in an unmixed or nearly pure form, partly in a mixed condition. Some other authors, for instance Kollmann, are inclined to be of the opinion that the mixed forms now hardly exist, or will soon be vanishing from the chain of the pedigree, so that finally only the purer race-types, or some of them, will survive. There is some reason to believe that the Mendelian law is valid also in respect to the human races.

A third important problem, difficult to solve, which is in a way connected with the last, is this: Are the race characters and, consequently, the races themselves *still alterable or already fixed*? Or, in other words, are the human races still obeying the laws of evolution or not? One would willingly be inclined to accept the former alternative, but certain proofs have not yet been presented. Amongst the anthropologists there are differing opinions about this

question. Thus Professor Kollmann has already long ago held the view that since the Diluvium no change has taken place in the *essential* characters of the human races, only in the unessential, which are to be found within the limits of the sphere of variation. Other authors hold that alterations since that time not only have taken place but are still going on. Some of them even go so far as to pretend to be able to prove that amongst certain parts of the race branches in Europe, by the influence of culture, the whole length of the body has been augmented during the last century, and that the capacity of the skull has been increased during the last thousand years.

The last two statements being founded upon direct observations, I have considered it desirable to make investigations for controlling these pretended facts. As for the *bodily length*, I have not only taken into account the measurements of the army recruits during later times, by which an attempt has been made to demonstrate an apparent growth, but such an increase must be illusionary, depending upon an accelerated growth during the period of early manhood in consequence of an improved nutrition, which acceleration probably continues until the maximum size of that race branch is reached. In connection with my work on the skulls of the ancient Swedes (*Crania Suecica Antiqua*, 1899–1900), I have already undertaken an investigation of the long bones of all the ancient skeletons found in the graves of the Stone, Bronze and Iron ages in Sweden in order to calculate the bodily size of the ancient Swedes with the aid of Manouvrier's tables. But as these tables deal with a race branch other than the North European, I have always been hoping that before publishing the results of my measurements I should be able to control them by another table of measurements regarding this North European race branch.

Now Professor Hultkrantz has lately informed me that he has recently, without knowing of my investigation, undertaken measurements of a number of other series of long bones from our Iron and our Middle ages. I therefore placed at his disposal my series of measurements, in order that the greatest possible quantity of material might be assembled. Professor Hultkrantz has this summer accomplished a good deal of the work, and he has been kind enough to place his results at my disposal. I therefore beg here to give a short report of them. He will later complete his researches, and publish a detailed description of the results.

The long bones at his disposal were found in graves from the *Neolithic*, the *Bronze*, the *Iron*, and the *Mediæval* periods in Sweden. As they were but seldom found in such a position as made it possible to determine whether the different bones (humerus, radius, ulna, femur, tibia, fibula) had belonged to the same individual, it is impossible to tell how many individuals the bones represent. And in several of the series it was impossible with any certainty to distinguish the male from the female bones. Professor Hultkrantz is also of the opinion that the number of the different bones, especially from the Stone and Bronze periods, is still too small for drawing sure conclusions, and he therefore draws them only with some reserve. He, however, comes to the conclusion that during the *Stone*

period the average size of the body of the men was (if we judge from the femora) 1·66 or 1·67 m. During the *Bronze* and *Iron periods* it seems to have been about the same, even if the measurements are suggestive of an increase. The bones from the *Mediæval period* (the year 1361), from a great battlefield on the island of Gotland, gave an average size of the body of 1·67 m. The recruits in the years 1887–8 in Sweden, according to Professor Hultkrantz' investigations, had an average length of 1·6903 m., in the years 1897–98 a length of 1·6996 m., and in the years 1907–8 a length of 1·7147 m.

Professor Hultkrantz comes to the conclusion that *he will not maintain more than that his inquiry has made it probable, that the mean length of the body during the Stone period in Sweden was less than in our age,* and that the difference seems to have been between 4 and 6 cm. Perhaps it has changed during different periods and in different parts of the country. *Probably the greatest increase has taken place during the historical period.* For this fact the relatively great increase from the fourteenth century until our age is suggestive, and particularly the rapid increase during the latest decades. In regard to the last-mentioned increase I may nevertheless point to the suggestion made above that there now may be more rapid growth during early manhood than was the case in former times, in consequence of better nutrition during recent decades.

As for the other question regarding the increase of the capacity of the skulls during the last thousand years, it was Broca who in his treatise, "Sur la capacité des crânes Parisiens des diverses époques" (*Bulletins de la Société d'Anthropologie de Paris,* tome iii, et plus tard dans les *Mémoires d'Anthropologie,* tome i, p. 348), was the first to raise this question and to publish observations upon it. He had at his disposal three series of skulls :—

	Number of skulls.	Capacity.
Series 1.—Skulls of the twelfth century ...	115	1425·98
Series 2.—Skulls from a burying-place, earlier than the eighteenth century.	117	1409·31
Series 3.—Skulls of the nineteenth century ...	125	1461·53
Total	357	—

It would carry me too far to refer more closely to the reasonings of Broca about the burial in these churchyards of the poorer or the higher classes of society, reasons and arguments which do not appear to me very convincing with regard to the conclusions made by him.

I shall here confine myself to the observation that for a satisfactory solution of such an important problem a much larger number of skulls is required; besides this it should have been necessary to be able to settle, at least in some degree, to what branch of the European race the skulls of the three series had belonged; finally, the sex of the individuals in each one of the series and also their age ought to have been taken into account.

To draw such important conclusions so positively from the average of the measurements of each of the above mentioned series, as Broca has done, can from a critical standpoint hardly be defended. His principal resolution was: "Je considère donc comme certain que, toutes choses égales d'ailleurs soit par suite de l'éducation, soit par suite de l'hérédité, le volume du crâne est plus considérable dans les classes supérieures que dans les classes inférieures."

Topinard, the pupil of Broca, who has repeatedly referred to these investigations of the master, became more and more cautious and reserved. In the year 1876 (*L'Anthropologie*) he declared: "La capacité crânienne paraît varier avec l'état intellectuel. Les crânes des Parisiens du dix-neuvième siècle sont plus capaces que ceux du douzième, ceux des sépultures particulières plus que ceux de la Morgue." In a treatise of the year 1882 (*Revue d'Anthropologie*, Sér. 2, 5), in which he gives a detailed account of these researches of Broca, he quotes the measurements of the cranial capacity of the master, but I do not here find his conclusions mentioned; Topinard, on the contrary, forcibly accentuates the importance of having large series of skulls, of being very particular in separating the male and female skulls, and of leaving out the hydrocephalic and microcephalic skulls.

In some anthropological works of later date, however, the opposite line, that of incautiousness, has been chosen. I shall quote only one of those works, Dr. G. Buschan's *Gehirn und Kultur* (Wiesbaden, 1906). After having mentioned the measurements of Broca and Topinard, which show an increase of the cranial capacity of 35·55 ccm. from the thirteenth to the nineteenth century, he adds (R. 2): "Mit Recht legten beide Beobachter diese ihre Ergebnisse dahin aus, dass die Grössenzunahme des Schädelbinnenraums auf Rechnung der zunehmenden Intelligenz und Kultur zu setzen sei." Buschan further quotes the observation of Emil Schmidt, that the modern Egyptians have lost 44·5 ccm. of the cranial capacity possessed by their ancestors: "Für diese nicht minder bemerkenswerte Tatsache lag die gleiche Erklärung wie oben auf der Hand; nur vice versa." The poor Egyptians have gone backwards in civilisation, and in connection herewith they have lost a portion of their cranial capacity, *i.e.*, of their brain volume.

Buschan has in his treatise above quoted brought together statements of some other authors regarding these questions.

He has also himself, using the horizontal circumference of the skull as measurement, made an inquiry concerning the population of the Rheinland (*Rheinländische Bevölkerung*); from this inquiry he draws the following conclusion: "Hiernach zu urteilen hätte der Schädelumfang von der Steinzeit an bis zu

Beginn unserer Zeitrechnung zugenommen, wäre dann weiter aber bis zum frühen Mittelalter zurückgegangen und erst von dann an wiederum angestiegen, allerdings mit einem erneuten geringen Rückgang im 19. Jahrhundert."

"Wir haben gesehen," says Buschan, "dass vermehrte Gehirnarbeit ein Wachstum dieses Organs zur Folge hat. Es fragt sich nun weiter, ob ein solches durch Übung an Volumen vermehrtes Gehirn sich *vererben* kann? Wenngleich die Vererbung erworbener Eigenschaften vielfach noch in Abrede gestellt wird, *glaube ich für meine Person* doch an die Möglichkeit einer solchen Übertragung."

On such facts, as here mentioned, this whole "theory" (or rather dogma) is based. It ought to be superfluous to criticise it in a more detailed manner. In his interesting book, *Beiträge zur Europäischen Rassenkunde*, Dr. C. Roese has already delivered a good criticism of these views. But they are still often reproduced, especially as based upon the high authority of Broca.

Every person who is accustomed to draw strict conclusions from real scientific data will find that this theory of Broca's is based on far too slender arguments. So far as I knew his high love of scientific truth, I am inclined to think that Broca, if he had to judge now about the problem of this rapidly increasing capacity of the skulls, would himself hardly insist on maintaining the certainty of that theory.

Though I am, of course, in no way an adherent of it, I nevertheless thought it interesting to try to furnish some real proofs for my negation, and to make an investigation upon the Swedish skulls from the corresponding period, which are at my disposal.

In the Anatomical Museum of the Caroline Institute at Stockholm 133 Swedish skulls from past ages could be used for this inquiry, which skulls I have measured with the consent of the Director, Professor Erik Müller. And in the Anatomical Museum of the University of Uppsala, with the permission of the Director, Professor J. A. Hammar and of Professor V. Hultkrantz, Mr. Vallentin, the Assistant, has measured several series of skulls (424).

The Swedish skulls from the past centuries which have been measured thus amount to the number of 557. I am quite aware that this number is much too small to in any way give reliable results in so complicated a problem as that here discussed. But the number is nevertheless greater than that of Broca.

During this investigation I have also had the opportunity of convincing myself of the difficulty, even of the impossibility, of solving the problem by measuring some hundreds, or even thousands of such skulls collected in some old churchyards, where the mixture of different race elements and different sexes is often very difficult to discriminate, and where it is impossible to learn how far advanced in civilisation and culture the individuals there buried have been.

It would really be of very little use here to give a detailed report of this inquiry. The results of such an investigation depend above all upon an exact distinction of male and female skulls; but this is a rather difficult task, and not seldom we remain in doubt regarding the sex of the individuals. I shall therefore give only some few figures:—From the *Stone* period 14 male skulls gave a mean

capacity of 1502 ccm., 4 female skulls a mean capacity of 1276 ccm.; from the Bronze period 1 male and 2 female skulls gave respectively 1510 and 1266; from the Iron period 17 male and 5 female skulls gave respectively 1503 and 1294 ccm. From the older Mediæval period 15 male and 15 female skulls gave respectively 1441 and 1286 ccm. From the later Mediæval period 30 male and 30 female skulls gave respectively 1476 and 1291 ccm. Fifty other male skulls from three churchyards in different parts of Sweden gave the mean capacity of 1435 ccm. Forty male skulls from a churchyard (in a real Swedish centre of culture), which was used during the fifteenth, sixteenth and seventeenth centuries, gave a mean capacity of 1417 ccm., which is less than the average figures from the mediæval age and still less than those from the Stone, Bronze and Iron periods. Mean figures also of such insignificant value, I got from the other churchyards of the Mediæval period and of the later centuries. If only some more skulls of a higher capacity instead of a lower had been found, which is often quite dependent upon chance—the mean capacity of the series might have been brought up and risen to a remarkably high standard. Like Dr. Buschan, I think we ought to be very careful in drawing conclusions from average figures—and I have in my former anthropological works, now more than thirty years ago, repeatedly urged caution with regard to them. They may be of value, but they are also dangerous. In this particular case they have indeed been dangerous because first so great an authority as Broca and then after him several other authors have drawn conclusions of great importance from such doubtful data. These data and similar conclusions have already been quoted as certain in books written for the general public and for school-children, who accept them as confirmed facts. It is for this reason that I have attacked them here in rather strong terms.

I also take this opportunity here to warn workers in the field of anthropological research generally against drawing conclusions from uncertain facts and passing them on to the public. We have during the last year witnessed how the newspapers and journals in almost all civilised countries have abused the latest anthropological discoveries in the south of France, and furnished the most fantastic descriptions and illustrations of the palæolithic human skeletons found there. Professor Klaatsch in his last treatise about them also protests against this profanation of science. It is indeed of importance that all lovers of true science should do all they can to resist this thirst of the great public for sensational stories, which bring true science into discredit. The great public, as well as the scientists, ought to be conscious of the great difficulties connected with anthropological science and should not draw hasty conclusions.

* * * * * * * *

It is not my intention here to furnish any programme for anthropological research. It would require the time of a whole lecture at least. I shall in closing this address only point out a few things, which are of special importance for the study of the European race. As to the knowledge of the descent of this race and its different branches we must wait with patience for the discovery of

many more authentic, old, palæolithic human skeletons and relics. And regarding the investigations of the recent race-elements we ought to continue to collect all the testimonies which are of value for the solving of the problems, *i.e.*, the testimonies in the graves as well as among the *living* peoples.

As to the latter I want to repeat the proposal which I have already made here, that in *every country there ought to be arranged every 25th or 30th year a thorough anthropological scientific investigation of the population*, as extensive as possible—and above all on the fullgrown men—in order to investigate *what changes it has undergone during the preceding period.* And then in every country the anthropologists also ought to choose some special fields for their investigations and there particularly investigate those portions of the nations which possess the purest racial characters. In this respect I myself long ago (in 1873) chose the province of Dalecarlia in Sweden, where I have collected a good deal of material for such a research, and I hope some time to have an opportunity of giving a thorough account of this very interesting portion of the inhabitants of my native country. As proposed in the Preface to the *Anthropologia Suecica*, such a thorough investigation of the population in the Swedish provinces, and then, especially, also in those where the anthropological differences, above all the dolichocephaly and the brachycephaly, are more numerously represented, ought to be undertaken as soon as possible.

It is, however, not so easy to find enough trained workers in this field, and the expenses for such investigations and for the publication of them are not inconsiderable. There are therefore several obstacles to overcome. I suppose the same difficulties are to be found in most countries.

The nations and their Governments do not yet understand the high ideal and social importance of the anthropological investigation of the populations. Their sympathetic and material support is very desirable in this vast and arduous field of scientific research.

With the lapse of time this work is becoming more and more complicated and difficult to accomplish. In connection with rapidly improving inventions in the domain of communications, population is becoming more and more mobile. If we are to learn to know the real characters and the present distribution of the race elements, it is necessary that the thorough anthropological inquiries above mentioned should be made as soon as possible. It will then be easier in the future to understand that mixture of the peoples, which certainly is going on with constantly increasing rapidity and intensity.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.[1]

By C. G. Seligmann, M.D.

[With Plates XXIV–XXXIII.]

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In the last number of the *Journal* I endeavoured to classify the ethnic groups into which, in the present state of our knowledge, it is possible to divide the Papuans and the Massim (Eastern Papuo-Melanesians). Before proceeding to discuss the Western Papuo-Melanesians in the same way I desire to make certain corrections in the first part of this paper. The third paragraph on p. 252 begins with the words "All Papuo-Melanesians," the words "Many but not" should be prefixed to this sentence. On p. 255 the words "to anything like the same degree" should be added to line 27 at the end of the first paragraph.

As already explained on p. 253 I use the term Western Papuo-Melanesian to include all the tribes lying between the Papuans in the west and the Massim in the east. I do this with full appreciation of the fact that some of the scarcely known tribes which are thus included among the Western Papuo-Melanesians may later be shown to be modified Massim, or even to be the result of the fusion of Massim and Papuans, or of Massim, Western Papuo-Melanesians and Papuans.

I have already referred on p. 267 to tribes of mixed origin living in the neighbourhood of Cape Nelson and containing both Papuan and Papuo-Melanesian elements. Probably such tribes also exist inland in the neighbourhood of the 150th parallel of latitude, but as yet we know nothing of the physical and

[1] The first part of this paper dealing with the Papuans and the Massim appeared in the first half-yearly number of the current volume of the *Journal* on pp. 246–274 (*supra*).

cultural characteristics of the inland tribes in this neighbourhood, though if they are of mixed origin, it is but reasonable to suppose that they have arisen from the fusion of Massim and Papuans. Although we know more of certain of the tribes of the western division of the Papuo-Melanesians than we do of any other Papuasians, our knowledge of all except a few tribes occupying the coast or its immediate hinterland is very incomplete. Physical measurements of a small number of individuals have been taken, and the chief features of the social system common to the majority of the tribes that fringe the sea coast have been observed, but there is little or nothing known concerning those tribes which live inland.

It is, however, certain that the tribes of the western division of the Papuo-Melanesians vary among themselves, both in physical and cultural characteristics, far more than the Massim who are comparatively homogeneous in cultural characteristics, and in physical characters show a more or less orderly change from west to east, from short-statured dolichocephaly to brachycephaly associated with increase of stature.

For these reasons I do not purpose to follow the logical plan of beginning at one end of the coastal zone inhabited by these tribes, and successively describing them in orderly sequence, but I shall take first the best known tribes around Port Moresby and then describe the less known natives to the east and west of this centre.

The Lakwaharu Group.

The Motu is the strongest as well as the best known coastal tribe of the central division, and its organisation is typical of that of a number of tribes of this district. In spite of this, I have not given its name to the group of tribes, of which it is the most important member, in order to avoid the confusion which would arise from the recognition of a group called Motu in addition to the tribe of that name. Lakwaharu, the name proposed for the group, is the tribal name of the inhabitants of Tupuselei, who physically and culturally scarcely differ from the Motu tribe with whom they are generally classed. Indeed any slight differences that may exist are probably to be explained as the result of intermarriage of the Motu with the Koita, so that the Lakwaharu may really be more pure-blooded than most Motu among whom intermarriage with the Koita has taken place. This was first pointed out to me by Captain Barton, who believes the Lakwaharu tribe to be purer Motu than the Port Moresby Motu who are generally regarded as typical Motu.

The villages of the Lakwaharu group include the great Hanuabada (Port Moresby) settlement and stretch coastwise from Kapakapa to Redscar Head. Within this group I also include three tribes, the Ikoro, the Gaboni, and the Sinaugolo, representatives of whom are found near the coast in the neighbourhood of Kapakapa. The two first mentioned are small tribes whose villages lie within a few miles of the sea. The Sinaugolo are a powerful tribe whose settlements extend

from the edge of the hilly country some three miles from the coast behind Kapakapa, up the valley of the Kemp Welch River and its tributaries, the Hunter and Musgrave Rivers. For all practical purposes the Ikoro and Gaboni may be included among the Sinaugolo, and probably it will be found on careful inquiry into their history that they represent early migrations of the same stock.

Both tribes speak dialects of Sinaugolo which itself is spoken as far inland as Mount Douglas (Karaigoro) running eastwards as far as Babaka Dobo behind Hood Bay and westwards to within three miles of Kapakapa. Taboro, a dialect of Sinaugolo, is spoken in the neighbourhood of Taborogoro (the traditional place of origin of the Sinaugolo), and this dialect runs east through the hills at least as far as Ikea on the upper waters of a river which appears to be identical with the Upugau.

With the Motu must be reckoned the Koita, a tribe speaking a Papuan language who have for generations intermarried with the Motu and whose villages are usually built near, or even in direct community with, those of the Motu. Although the Koita still speak a Papuan language, the majority of the males, at any rate in the eastern moiety of the tribe, speak Motu, a Melanesian language, and have adopted to a greater or less extent certain Motu arts and customs, such as pot making and the *hiri*, the annual trading voyage to the Papuan Gulf. Fifteen Motu, in whom there was avowedly more or less Koita blood, gave an average cephalic index of 77·2 (min. 71, max. 91). If the average index of only fourteen of these be taken—*i.e.*, the unusually high index of 91 be omitted—the figures become 76·2 (min. 71, max. 81). The average stature of these men is 1·621 m. (about 64 inches), but this includes one exceptionally tall man of 1·820 m. (71¾ inches). The physical characteristics of the men of this group will be readily appreciated from the figures on Plates XXIV and XXV.

Plate XXIV, Figure 1, represents five young men of Tupuselei village, *i.e.*, members of the Lakwaharu tribe, and shows the typical, rather round, face with not very prominent features. One of these youths has slightly oblique eyes, a matter to which I shall return later.

The slighter, more round-faced man in Plate XVI is one Rahu, a Motu of Tanobada, one of the Port Moresby villages; this youth's father, Gamea (Plate XXIV, Figure 2), is a very typical Motu in his late prime. Plate XXIV, Figure 3, is a Gaile man with a rather longer and narrower nose than is altogether usual, though individuals of this type occur in all the Motu villages. Figures 1 and 2 of Plate XXV are full and side face views of Ahuia, the chief of the Hohodai Koita, a man of pure Koita blood as far as his genealogy can be traced. It will readily be seen that he is of the same physical type as Rahu. The more coarsely-built man in Plate XVI is Garia, also a pure-blooded Koita according to his genealogy, and actually a relative of Ahuia. As has already been mentioned, his coarser type of feature must be assumed to be due to Papuan influence, and men of this build and type of face are by no means uncommon in the Motu and Koita villages. Finally Figures 3 and 4 of Plate XXV show respectively a thoroughly

typical Motu youth and girl from Port Moresby. I have given a number of photographs of members of this group because they illustrate the amount of variation that occurs in a single group which, as far as historical and cultural evidence may avail, is no less pure-blooded than any other coastal group of this division of Papuo-Melanesians.

Precisely the same variations occur among the Sinaugolo (including the Ikoro and Gaboni) where a "Papuan" type, resembling the man shown in Plate XVI, is by no means uncommon, though the majority of individuals are softer featured. I am, however, of the opinion that, generally speaking, the Sinaugolo are somewhat longer faced than the true Motu.

It is among the Lakwaharu group that the open ceremonial platforms called *dubu* attain the maximum of importance, greater prestige being attached to the right than to the left side, and the chief of the clan (Koita, *iduhu rohi*) being that man who is the hereditary owner of the right front post of the *dubu*.

The Kabadi are a weak tribe inhabiting the coastal zone between the mouth of the Aroa River and Galley Reach, into which the Vanapa River discharges. Their ethnic position is uncertain and I have little first-hand information concerning them. The only Kabadi men that I have seen were visitors at Port Moresby, and their appearance and language suggested that they were closely related to the Motu. On the other hand, a story I heard in Mekeo attributed the origin of Kabadi to immigrants from Mekeo, and the dancing head-dresses worn by the visitors at Port Moresby certainly suggested Mekeo influence. Further, Dr. Strong tells me that instead of *dubu* the Kabadi have club houses, which in a general way resemble those of the Roro. Probably the element forming the basis of the Kabadi belongs to the Lakwaharu group, though it has become modified by the reception of immigrants from Mekeo and perhaps from Roro.

The coastal tribes of the Lakwaharu group (Motu, Koita, Lakwaharu, Kapakapa) and of the Keapara tribe, which will be described immediately, are the people who are best known as the builders of the marine villages of pile-houses, which are found dispersed over nearly 100 miles of coast line in the Central Division.

The Keapara Group.

Passing eastwards along the coast a somewhat different type of man is met from the Hood Peninsula extending eastwards as far as the Aroma villages, the most important of which is Maopa. I do not know whether this group extends further to the east than the Upugau River, provisionally we may consider this to be the eastern limit of its component tribes which I propose to speak of as the Keapara, this being the tribal name of the inhabitants of Kerepunu and Hula, the two best known villages of the group. The men of the Keapara group are on the whole taller and more brachycephalic than their eastern neighbours. Few measurements are available from the Hood Peninsula villages Kalo, Babaka and Kamali, but

two Babaka men measured by Dr. Haddon were 1·733 m. and 1·650 m. high with cephalic indices of 80·3 and 74·7 respectively.

Fifteen Hula natives measured by the same authority gave an average cephalic index of 82·9 (min. 78·5, max. 86·5). The average height of these men was 1·664 m. (min. 1·610, max. 1·715). Hula migrated about 30 years ago from Alukune, the fishing village associated with Kerepunu in Hood Bay, and Kerepunu itself is predominantly brachycephalic, while Sergi[1] records a skull from Aroma with a cephalic index of 81. Figure 1 of Plate XXVI represents a man and woman of Hula. Although I have seen little of Kerepunu I have measured one Kerepunu man 1·821 m. (71¾ inches) tall, and have seen another probably as tall; while the unusual stature of Koapena, late chief of Aroma, was a matter of common knowledge. Curly and wavy hair is remarkably frequent among the natives of the Keapara group, being specially common at Aroma. It is not without significance that of the five men of this group whose photographs (taken by Captain Barton) I have, only two have frizzly hair, that of the other three being wavy; I do not, however, suggest that this is the proportion throughout the group, it certainly varies locally, and may I think be definitely stated to attain its maximum at Aroma, where, if I remember rightly, Captain Barton estimated that perhaps 20 per cent. of adult males have hair that is not frizzly. Figure 2 of Plate XXVI and Figure 1 of Plate XXVII show full face and profile views of three Aroma men.

The Keveri Group.

Very little is known concerning the tribes between Aroma and Mullins Harbour, where the territory of the Massim begins. I have, however, seen a number of natives said to come from the Keveri valley a few miles from the coast behind Cloudy Bay, and the difference between them and the Keapara group was very striking. They were shorter, darker, and all had frizzly hair; besides this they were more long-headed. Thus the average height of eight men was 1,584 mm. (62⅜ in.) and their cephalic index 78 (min. 71, max. 83). Although so little is known about this part of the Possession I consider it legitimate to form a provisional group to include these people, who at present are the type and only representatives of the group. These natives were said to resemble the coast natives of Cloudy Bay, and like them to be specially fierce and little amenable to Government influence. A skull with a cephalic index of 69 from Domara, some fifteen or twenty miles to the east of Cloudy Bay, has been described by Sir W. Turner.[2] Perhaps this skull should be considered as derived from a member of this group.

Mailu Group.

The Mailu inhabit the country around Port Glasgow and Milport Harbour. They are predominantly mesaticephalic with an average cranial index of 78·6 and a medium stature of 1,600 mm. (about 63 inches). Their skin colour is generally a

[1] *Le Varietà Umane della Melanesia.* [2] *Challenger Report*, Part XXIX, 1884, p. 88.

light *café au lait* and their hair is sometimes curly rather than frizzly. Although speaking a Papuan dialect their appearance strongly suggests admixture with some other stock.

The Mailu include the most eastern Papuan-speaking tribes of the south coast reaching to Orangerie Bay, of which, however, they only occupy part. The other portion of Orangerie Bay is inhabited by tribes speaking a Melanesian dialect, doubtless the most eastern of the Massim dialects of the south coast. Very little is known of the tribes in this part of New Guinea; their linguistic relations have been studied by Mr. Ray,[1] and Captain Barton informs me that on the physical side all the Orangerie Bay natives are Melanesian rather than Papuan. My own very limited experience agrees with this. I have measured four Bonabona men, said to come from the eastern portion of Orangerie Bay, who had sailed as far west as Port Moresby in one of their own outrigger canoes. These men resembled the Mailu in general appearance but were more brachycephalic (average 82, min. 79, max. 84); nevertheless a dolichocephalic element may exist in this neighbourhood, for there is a skull (No. 1201 B) with a cranial index of 70·5, said to be from Orangerie Bay, in the Museum of the College of Surgeons. In a volume now in the press I have summarised the little that is known concerning the social organisation of the Mailu, and have shown that the Mailu social fabric is essentially that of the Western Melanesians, nevertheless there is abundant evidence that Massim influence has also been exerted there. Captain Barton's series of photographs and drawings of the tattoo patterns used by the women of Mailu indicate that many of these patterns are identical with those used by the Massim of Rogeia and Teste Island. Further evidence is to be found in pottery made by the Mailu. The appearance and texture of these pots suggests that they have been made by the method of coiling used by the Massim. They are ornamented with designs scratched on the clay while still soft, and in many cases these designs are identical with those used by the Massim.

The Bonabona canoe, already mentioned, was a small dugout with a single outrigger, its depth being increased by a board a few inches deep lashed to its sides and ends. A single mast supported the oblong mat sail characteristic of the Massim. The whole craft was very lightly built.

The Roro Group.

Returning to the Central Division the first well-defined coastal group west of Galley Reach and Redscar Head (the limits of the Lakwaharu Group) may be called the Roro, the name of the group being derived from the best-known of its component tribes which, from east to west, are Marihau, Roro, Paitana, Waima (Maiva), Bereina and Kevori.[2]

[1] *Reports of the Cambridge Anthropological Expedition to Torres Straits*, vol. iii. See especially the second map between pp. 288 to 289.

[2] The Roro-speaking tribes occupy a territory about the mouth of the St. Joseph river extending from Kevori, east of Waimatuma (Cape Possession) to Hiziu in the neighbourhood of

The Waima and Kevori speak a dialect which differs from that of the more eastern members of the group; the people of these two tribes have been considerably influenced by the proximity of the Papuan Gulf, and their members present two distinct physical types, one identical with that of the Roro tribe, the other longer faced and approaching the Elema in size and vigour. Ignoring the Waima and Kevori tribes, the average cephalic index of thirty Roro men measured by Dr. Strong was 79 and their average stature 1·617 m. (about 63½ inches).

Figures 2 and 3 of Plate XXVII, for which I am indebted to Dr. Haddon, are full face and profile views of a typical Roro man and youth. Plate XXVIII, Figure 1, represents two Waima men; the less profusely ornamented is decidedly of the Elema type.

On the cultural side the Roro group are sharply differentiated from their coastal neighbours to the east by the absence of the *dubu* and the presence in each clan (often in each local group of each clan) of one or more club houses (*marea*), which are closely associated with the chiefs of the clan or local group. In considering the *dubu* of the Lakwaharu group mention was made of the greater honour attaching to its right than to its left side. Among the Roro this distinction has been carried a stage further, the high chief of a clan or local group is called the *ovia itsipana, i.e.*, chief of the right, and on certain ceremonial occasions takes his stand to the right of the middle line of the club-house, while the *ovia awarina, i.e.*, the chief of the left, is subordinate to him and in certain ways acts as his executive officer.

The Mekeo Group.

The two important tribes of this group are the Biofa and the Vee, inhabiting the alluvial flat of the St. Joseph river above the coastal zone occupied by the tribes of the Roro group. A small but uncertain number of villages on the middle reaches of the Biaru River must be considered as ethnographical annexes to Mekeo, for physically and in their customs generally they resemble the Mekeo folk, among whom they have formed many colonies and with whom they intermarry.

In ultimate composition the Mekeo population no doubt agrees with all other Western Papuo-Melanesians, that is, it is the result of the fusion of an incoming race with a Proto-Papuan stock. With regard to its proximate composition, a recent mountaineer element can be distinguished. The Lapeka or Rapeka, a tribe living some ten miles to the east of the St. Joseph River and some twenty miles from the coast, have for a long time traded and married with the Mekeo.[1] A party of

Galley Reach. But Hiziu and the village of Nabuapaka are comparatively recent colonies; and Delena, which is in part composed of the descendants of a Roro-speaking stock, should probably be considered the eastern limit of the Roro district. Marihau is now a very weak tribe represented only at Delena.

[1] My informants held that the intercourse between Rapeka and Mekeo was formerly more considerable than at the present day.

Rapeka men whom I met on one of their visits to Mekeo would have passed for natives of Mekeo although speaking a different language. Dr. Strong, who has visited the Rapeka tribe, writes that there is no doubt that they are essentially Kuni (a Melanesian-speaking mountain tribe), modified by contact with the inhabitants of the Mekeo but still speaking the Kuni language.

The men of the Mekeo group are distinctly brachycephalic; the average of twenty-nine men gave the high cephalic index of 83; the average stature of the men of the same group 1·585 m. (62 inches). With regard to the cephalic index, another series of sixteen, measured by Dr. Haddon, gives a rather lower index, and not only is the average index 80 lower, but this series also contains individuals with indices of 76 and 77, *i.e.*, lower than any in the first series. Perhaps this should be taken as a more typical series, since six men from Tatikaro on the Biaru River gave an average cephalic index of 80 (min. 76, max. 84).

There is a great deal of variation in the colour of the skin and character of the hair in all the natives of the Mekeo group. Curly and wavy hair is by no means uncommon; further, there is considerable variation in the type of feature, as will be obvious on comparing the photographs of the two young men shown in Plate XXVIII, Figure 2, with that of Opungu Ongopaina, the high chief (*lopia fäa*) of Inawi (Plate XXIX, Figure 1).[1] With regard to the latter it should be noted that such dignified and even aristocratic faces as this, though not common, are not very rare.

Captain Barton took the photograph of the two young men shown in Plate XXVIII, Figure 2, to illustrate, as far as possible, the characteristics of the dark and light types that occur in Mekeo, and it thus registers, so far as an ordinary photograph can, the difference in depth of colour in the skin of the two types, the skin of the lighter being of a yellowish brown or very light *café au lait* colour.

The language of Mekeo resembles that of Roro, but presents peculiarities in the phonetic system, such as the frequency of aspirates and gutturals, which Mr. Ray thinks may point to Papuan influence.

[1] This man's family history has been traced back by Father Egidi for seven generations to one Maino Amaa who lived at Ioiovina, the historic site of origin of the Biofa, whence they spread to found Inawi and many other villages in Mekeo plain. The genealogies collected by Father Egidi indicate that Maino Amaa had among his children three sons; two of these, Amewa Kaiokuau and Opungu Kaiokuau, were among the first of their *pangua* to leave Ioiovina, crossing the river and settling between the present sites of Inawi and Inawae. From the beginning the war chieftainship was in the family of the descendants of Amewa Kaiokuau; the high chieftainship (*fäa* chieftainship) was not in, and did not come into, the family until four generations ago, where the *fäa* chief was publicly shamed at a feast by one of his wives, and so made over his authority and its symbol, the lime gourd *faonga* used only by chiefs, to an ancestor of Opungu Ongopaina descended from Amewa Kaiokuau. It is thus clear that Opungu Onpopaina has had ancestors of importance for at least seven generations, and his physical type may fairly be taken to be that of the hereditary nobility of the tribe. He was measured by Dr. Haddon in 1898, who found that he was 1·565 m. (61½ inches) high, and that his cephalic and facial indices were 79·2 and 76·8 respectively.

The Pokao Group.

I am indebted to the Rev. H. M. Dauncey for the information that Pokao is the name that the inhabitants of the now extinct village of Vanuaboada, near the present Vanumai, applied to themselves, and also for the information that the whole of the area often spoken of as Nara has been peopled from Vanuaboada. Pokao is thus a far better and more natural group-name than the majority of those I use in this paper; further, it is used by the missionaries of the Sacred Heart and by Mr. Ray (who spells it Pokau) as the name for the language spoken by the members of the group now under consideration, who occupy a few square miles of land lying east of the Roro-speaking villages on the lower reaches of the St. Joseph River, extending eastwards nearly as far as the Aroa River.

The communities of the Pokao group are remarkable for the large number of their members who have curly, wavy, or almost straight hair, while many of their women have unusually light skins.

Plate XXIX, Figure 2, is a photograph of a Pokao woman with wavy[1] hair, for the loan of which I am indebted to Mr. D. Ballantine. The narrow, somewhat oblique eyes, wavy hair, and comparatively light skin of this woman make a picture totally unlike that of a typical Papuasian. The nose, though Papuan in its coarse and overhanging tip (a characteristic I have noticed in a number of women combined with wavy hair), has a well-shaped bridge and adds to the striking effect of the face.

It is scarcely less surprising to find a number of boys with the hair and physiognomy shown in Plate XXIX, Figure 3, running about the villages.

Although the Pokao say that they originally came from inland and regard themselves as inland people who have migrated towards the coast, there can be no doubt that they represent a wave of immigrants who made their way inland, where they formed settlements, which they occupied for long enough to allow them to forget their connection with the sea. Doubtless they intermarried largely with the aborigines of the country among whom they settled, but in spite of this I am inclined to consider these comparatively light-skinned and often wavy-haired people as the least modified descendants of the original immigrant stock, which must be regarded as the ancestors of the present Papuo-Melanesians. Measurements were made of twenty-five adult natives of Oroi and Diumana villages, of whom fifteen were males. The average cephalic index of these men was 75 (min. 70, max. 81), their nasal index averaged 83 (min. 73, max. 93), and their facial index 84 (min. 79, max. 88). The average height of twelve of these men was 1·679 m., about 66 inches. The cephalic index of ten women was 73·5 (min. 70, max. 80), their nasal index 79 (min. 64, max. 95), and their facial index 86 (min.

[1] In section such hair is almost circular, thus contrasting with the elliptical section of typically frizzly Papuasian hair.

80, max. 95). The average height of nine of these women was 1·576 m. (about 62 inches). The hair of only one woman was frizzly, that of the others being either wavy or curly. I do not, however, suggest that the whole of the feminine population presents anything like this proportion of wavy or curly hair; the natives perceiving my interest in wavy hair pushed forward those of their number with hair most nearly straight.

Among the men the percentage of wavy and curly hair was much smaller, for though some selection of wavy- and curly-haired men undoubtedly occurred, seven out of fourteen men examined are noted as having frizzly hair, while the remainder had hair which was curly or wavy, and in one case straight though not lank.

It is obvious that people presenting these physical characters cannot be other than immigrants, in spite of their own belief that they are inland people who have been forced towards the coast.

It is probable that a small tribe called Doura, living to the east of Pokao on the east bank of the Aroa river a few miles from the coast, should be included in the Pokao group. The language spoken by the Doura closely resembles the Pokao, and the Doura told Dr. Strong that they formerly lived in the Pokao district, but that they were driven thence by the Pokao. On their dispersal a part of those who did not settle at Doura fled to the Kabadi village of Matapaile, while the remainder travelled westwards to the Papuan Gulf, where they settled on the Cupola, a rocky promontory immediately to the south-east of the Kerema. At the present time there are two settlements of people, whom the Elema tribe regard as strangers, on the Cupola, and another small one at its foot, near the Elema village which is known to the Motu as Silo. But the evidence that the strangers have come from Doura is far from convincing, for language is the only test at present available, and its evidence does not support this hypothesis.[1]

So far we have dealt with a series of groups of Papuo-Melanesians inhabiting the coast or the country immediately behind the coast (in which case they have constant friendly intercourse with the coast natives), all of whom have certain characters in common, *e.g.*, the more or less frequent occurrence of curly or wavy hair, and a rather light bronze skin, which in every tribe, so far described, presents individual variations running through the whole gamut of shades, from a lightish yellow with only a tinge of brown to a tolerably dark bronze colour The lightest shades are everywhere uncommon, and in many localities appear to be limited to

[1] Dr. Strong has collected a vocabulary of the Tate language which is spoken on the Cupola. This has been examined by Mr. Ray, who considers that the Tate language is Papuan but quite distinct from the Elema, Namau, and Bamu groups of Papuan dialects and also from the Papuan languages of German New Guinea. Further, although in the Tate language there are some words similar to Roro, Mekeo, Pokao and Kabadi, these apparently Melanesian words are all (except five) words which in the four languages mentioned are unlike Melanesian.

the female sex[1] in whom wavy, as opposed to frizzly, hair seems to be much commoner than among men, at least in its more characteristic forms.

With regard to the forms of nose found among these tribes the variety is very great, as will be obvious on glancing through the plates. Many noses have high roots even when the nostrils are broad; some noses, though unlike the negro nose, can only be described as "snub." Noses which seen in profile can best be described as "semitic" are common, though as far as my experience goes they always lack the extreme coarseness of the nose figured in *Notes and Queries on Anthropology* (Plate IV, No. 8), as "Australoid or Papuan." It may, I think, be said that almost every type of nose except the *retroussé* may be combined with this; a few aberrant forms of nose occur, and I remember one Sinaugolo who had a high-bridged "Duke-of-Wellington" nose.

On the cultural side the most obvious characteristics of the whole group is the predominance in the decorative art of what Dr. Haddon has called geometrical designs. This essential unity of design is most readily seen in the tattoo patterns of the women of these groups which, if Aroma be excluded, may almost be spoken of as identical.

Such essential unity as this does not exist, or if it does, cannot at present be detected among the groups of natives who form the next series to be discussed. Broadly speaking these may be summarised as the hill and mountain men, who occupy the hinterland of that part of the coast that is not inhabited by Papuan tribes. The majority—perhaps all—of these tribes speak Papuan languages, but, as far as I know, none of them have the stature and bulky Papuan physique such as characterises the tribes of the Mamba and the Elema stock of the Papuan Gulf.

Further, individuals with curly hair occur in some of these tribes, though their number is very small. Like the coastal tribes just described I regard all the tribes of this series as being the result of the mixture of Proto-Papuans and immigrant Melanesians. Although the tribes of this series are very little known, I believe it is possible to define certain groups.

The Koiari Group.

Koiari is the term used by the Motu and their neighbours on the coast for the tribes inhabiting their hinterland, *i.e.*, the foothills and the lateral spurs of the main range. It is also the term applied by Mr. Ray to the several dialects of the

[1] I believe that the life led by Papuasian girls precludes the possibility of a specially light skin being due to lack of exposure to sun and weather, though I am aware that these factors are almost certainly operative in other parts of the world, *e.g.*, in Sarawak, where the daughters of chiefs may from this cause be distinctly lighter coloured than commoners. The lightest skin colours occurred only in a few girls, who, though always yellower, were surprisingly little darker than dark south Europeans.

language spoken by a number of tribes (all hill men or mountaineers) whom I include in the Koiari Group. I have not been able to satisfy myself that Koiari is actually the name of a given tribe, though as stated by Mr. Ray (*op. cit.* p. 351) this may be the case; certainly the name seems to be loosely applied to the inhabitants of many small settlements in the Astrolabe Range behind Port Moresby, and may thus have come to be regarded as a tribal name.

I regard the following tribes as belonging to the Koiari Group: Gasiri, Sogeri, Uberi, Ebe, Agi, and Meroka. All these live in the hinterland of the Motu tribes. With the possible exception of the Irumi, who live on the slopes of Mount Bride and are said to speak a Koiari dialect, the Meroka appear to be the most easterly tribe of the Koiari group, while to the west the Vanapa river may be regarded as their boundary.



SKETCH MAP OF PART OF BRITISH NEW GUINEA.

Measurements taken on the living (10) show that the Koiari are mesaticephals with an average stature of 1·582 m. (rather under 63 inches); there is, however, a curious discrepancy between the index calculated from measurements taken on the living and from skulls. Whereas the former (10) average 78 and show a min. of 73 and a max. 83, the average cranial index of seven Koiari skulls collected in the

neighbourhood of Port Moresby is 70 with a min. of 67 and a max. of 73. The crania in question include three skulls collected on the road to Wariratta, and the explanation of the discrepancy is probably to be found in the fact that most, if not all, these skulls have been collected within 20 miles of Port Moresby. On the other hand, some of the living subjects measured come from further inland, whence no skulls have been collected, if we except the single Kokoda skull already mentioned, with a cranial index of 77, collected by Captain Barton from the neighbourhood of Mount Victoria, which may perhaps be attached to this group. Plate XXX shows a number of men belonging to the tribes of the Koiari group. None of the men in this photograph have the full beards worn by the majority of the older men. Plate XXXI, Figure 1, shows the full beard worn by a man of Meroka who, to judge by his photograph, is unusually fat for a Papuasian. Many Koiari wear a moustache, and it is not very uncommon for the hair of the face to present a tinge of red or ginger colour.

The Kage Group.

Men of much the same build and height as the Koiari are met in the higher mountains behind the Koiari zone. Captain Barton states that these tribes speak dialects akin to Koiari, but that they are distinguished in their native mountains by the sporran-like garment worn by the men. Four of these mountaineers, measured by Dr. Haddon, had an average cephalic index of 81 (min. 78, max. 83), and an average stature of 1·613 m. (63½ inches).

The men of some of these sporran-wearing tribes, living in the neighbourhood of the "Gap" at a height of over 5,000 feet, are described by Captain Barton as rather light-skinned men, of excellent physique and pleasant unconstrained manners. Plate XXXI, Figure 2, shows a group of men from the neighbourhood of the Gap. Their appearance conclusively shows that, in spite of coming from the heart of British New Guinea and speaking a Papuan language, they possess more Melanesian than Papuan blood.

The Garia Group.

The Garia is the best known of a number of tribes who live to the east of the Koiari territory, and speak dialects of a Papuan language which differs from the various Koiari tongues.[1] Hence the name Garia may be usefully applied to the group of which this tribe is the best known representative.

The Garia dialects—for there are two forms of a stock language spoken by different tribes of the group—are spoken over a considerable area to the west of

[1] It seems likely that language will long remain an important factor in the differentiating and grouping of the comparati ely little known tribes of the Main Range and its foot hills.

the Kemp Welch River, which constitutes their eastern boundary.[1] The head-quarters of the tribes speaking them may be regarded as the Governor Loch Range, whence they have spread in a westerly direction towards the coast, the most westerly tribe, the Manukoro, being in contact with the coastal folk behind Gaile. Twenty men of the eastern branch of the Garia, inhabiting the neighbourhood of the western bank of the Kemp Welch, gave an average cephalic index of 77 (min. 72, max. 86), and were predominantly mesaticephalic. Four skulls which I collected from the bush in the immediate neighbourhood of the Garia village of Gosoro are, however, all brachycephalic with an average cephalic index of 81·2, a discrepancy which emphasises the necessity for the examination of large numbers. The average stature of twenty men is 1·603 m., and their general appearance suggests that the Papuan element, though present, is decidedly subordinate. This idea receives support from the character of the nose, the root of which is often moderately high with a tip that is seldom hooked, as well as from the fact that their hair may be curly or even wavy. In this and in many cultural matters they resemble their neighbours the Sinaugolo who speak a Melanesian language.

Plate XXXI, Figure 3, represents two Garia men. The man with short hair and wearing no ornament is Geboka Namo, the hereditary chief of the Garia, formerly also the leader of the Sinaugolo in war. Like his father before him, he is undoubtedly the most influential native in the whole hinterland of the Central district. The figure seated beside him is his brother.[2]

I have seen and measured only five men speaking the Manukoro dialect, belonging to the Lakumi tribe who inhabit the upper reaches of the Hunter and Musgrove Rivers. As far as this limited number goes, they seem to be rather taller and more dolichocephalic than the eastern Garia, and one of them had curly hair which was almost wavy. Behind the Garia and rather to their east, in the mountains between Mount Potter and Mount Obree (Dudigoro), are found the Kokila tribe, speaking a language which Mr. A. C. English calls Barai, and which it appears he considers nearly related to the Garia. Six men from the village of Seramine were mesaticephalic, with an average cephalic index of 77 and a stature of 1·578 m. (62 inches).

Although I collected no specimens of this language my information was to the effect that the Kokila or Barai language was distinct from that of the Garia, and

[1] These dialects may be termed the eastern and western Garia or perhaps more simply be named after the two best known of the tribes which speak them respectively. The Manukoro (western) dialect is spoken by the Manukoro, Lakumi, Iove, Medena, Ganai, Vegofi, Maru, Keberi, Dua and Unama tribes or communities, for although some of these names apply to tribes it is possible that not all do. The Garia (eastern) dialect is spoken by Garia, Gosoru, Gea, Usia, Wasira, Girabu, Geresi.

[2] The likeness between Geboka Namo and his brother is quite obvious and taken with the history of his family clearly indicates that his physical type fairly represents that of the aristocracy of the tribe. His height is 1·625 m. (64 inches), C. I. 78·3, Fac. I. 85·7, Nas. I. 74·6. The root of the nose is high and rounded, and except that the temporal muscles would be regarded as being unduly developed the features of this subject might be those of an intelligent European.

this opinion is shared by Mr. Ray.[1] I was told that the Barai language is also spoken by a tribe whom the Kokila call Koki, while a dialect of the same language is spoken by the Koriko tribe somewhat to the south of Mount Obree. Mr. Ray mentions an extinct language which he calls Mulaha, which was formerly spoken by the coastal neighbours of the Manukoro, and an almost extinct dialect called Iaibu, a vocabulary of which has been collected and published by Mr. A. C. English.[2] I have heard of a language, called Mulaha, used in the hills stretching eastwards from the Kemp Welch River behind Kwaipo to the hinterland of Keakoro Bay, but (even supposing my information to be reliable) I do not know whether this is the same language as that mentioned by Mr. Ray.

THE KOVIO GROUP.

The relationship of the various tribes inhabiting the mountainous hinterland of Mekeo, Nara and Kabadi is one of the most complex problems presented by the ethnology of British New Guinea.

With a single exception our knowledge of these tribes is extremely limited; some speak Papuan languages, others Melanesian, but even a slight acquaintance with these people shows that language is not a criterion of race, for broadly speaking the members of these tribes are alike in general appearance, being short, dark, and frizzly-haired. The sociology of the Kuni, the best known of these mountain tribes, has been described recently by Father Egidi,[3] and it may be that the customs of all these people show a substantial agreement.

The women all wear a narrow perineal band instead of the petticoat of their eastern neighbours the Koiari, and all inhabit small settlements of an impermanent character perched on the summit of razor-backed ridges. These collections of houses are generally stockaded and often defended by spear pits. As the tribal names of these people are doubtful or scarcely known, we may speak of these mountaineers as forming the Kovio group, Kovio being the name for Mount Yule around which these tribes are distributed. Some of the communities of this group, inhabiting the head waters of the St. Joseph and its tributaries, build suspension bridges across these torrents.

Plate XXXII, Figure 1, represents a group of Kuni men; it will be noted that most of them have Melanesian features. They are mesaticephalic with an average (15) cephalic index of 78, and although they are short, the average of eight men being only 1·542 m. (60½ inches), their stature is by no means so low as that of the men of some of the communities living in the mountains further inland.

The Kuni speak a Melanesian language which Dr. Strong considers is remarkable for the paucity of its numerals. "It extends over a considerable area, including the small districts of Rapeka, Idoido, Keakamana, Devadeva, and is also spoken for

[1] *Op. cit.*, p. 354.

[2] *Annual Report*, 1900–1901.

[3] "Casa e Villaggio, Sottotribu e Tribu dei Kuni," *Anthropos*, vol. iv, 1909.

some distance up the Dilafa valley."[1] With regard to Rapeka, this people has undoubtedly come into close contact with Mekeo, and has contributed towards the peopling of the Mekeo plains; it is therefore not surprising to find that the Rapeka "certainly use some Mekeo numerals."

It appears that no other Melanesian language is spoken as far inland as the Kuni, and the mountaineers around them speak Papuan languages. These almost unknown people may provisionally be called the Kamaweka, a term suggested to me by Captain Barton, which is used by some of the Mekeo tribes for the inhabitants of the higher mountains. Measurements taken by Dr. Strong show that the Kamaweka are among the shortest of the natives of British New Guinea. Eleven men, from the neighbourhood of Inauvorene on the Inava river, give an average stature of 1·487 m. (58½ inches), the extremes being 1·378 m. and 1·625 m. with only one man exceeding 1·575 m.

The average cephalic index of these men is 78. I have seen only one man from the Inava valley, the youth shown in Plate XXXII, Figure 2, but I am told that not all his fellows present the same repulsive appearance.

The Mafulu, whose villages run eastwards in the mountains behind Mt. Davidson and Mt. Pizoko, are almost as short as the men of Inauvorene and are even more roundheaded. The average height of seven men, measured by Dr. Strong, was 1·513 m. (59½ inches). The tallest man was only 1·602 m. while the shortest measured 1·482 m. The average cephalic index of these men is 80 (min. 76, max. 85). "These people have a heavy throwing spear and a narrow shield some 6 feet long, made from the section of a tree trunk. They also have a short bow, about 3 feet long. Although their villages are defended by palisades and pitfalls, they build tree houses. They have large gardens of sweet potatoes occupying the fairly open country, which in those hills is found at a height of from 4,000 to 6,000 feet."

Further east, and situated in the heart of the main range, are the Kambisa villages visited by Mr. C. A. W. Monckton and the Rev. P. J. Money in 1906. The illustrations of numerous objects collected by Mr. Monckton during his journey allow of no doubt but that these people are related to those living in the neighbourhood of Mount Yule.[2]

South of the Mafulu and east of the Kuni are found a people speaking a Papuan language which Dr. Strong calls Fuyuge. I shall therefore apply this name to the folk speaking this language. Thus defined, the term includes the Korona settled immediately behind the Kabadi and Doura, who speak Melanesian dialects. The eastern extension of the Fuyuge language is unknown, but Dr. Strong states that "it certainly comes into contact with dialects of the Koiari group of languages."

Sir William MacGregor has described the natives of Mount Scratchley, which

[1] This and the following passages in inverted commas are quotations from Dr. Strong's manuscript notes.

[2] *Annual Report* 1905–1906.

he visited in 1896 during his journey across the island, and although I have no measurements of these people and have never seen them, his description and the photograph reproduced in Plate XXXII, Figure 3, indicate that these mountaineers are Papuo-Melanesians and not Papuans. Sir William writes : "These people are of unusual interest on account of their geographical position. In colour they are of a dark bronze, a shade darker than the coast people of the central district, but much lighter than the men of the Fly Estuary. They are fully up to the average size of Papuans,[1] and many would be described as being bony and wiry rather than muscular. They are much larger men than those of the islands and of many parts of the east end of the island. Amongst the something over a hundred natives present there was not one with straight or wavy hair; and there was only one man that could be called hairy. . . . The young men wear the hair plaited into small cord-like divisions, often not thicker than a crow quill, but usually with some stripes of leaves, red and yellow in each plait. The elderly men wear their hair short and unplaited. . . . The young men wear the eyebrows in the natural condition ; the elders cultivate whiskers, but vigorously depilate the rest of the face, a fashion that gives them a somewhat grotesque clerical appearance. They have good, high foreheads, brown eyes, the lips inclined to be thick, the cheeks rather broader than ordinary, and the chin stronger. In short, their features are a trifle more robust than is usual in the central coast district. . . . The older men use the perineal band and girdle, made of native cloth ; the young men dress in the same manner, but the great peculiarity of their costume is that the parts concealed by the perineal band anteriorly, are enveloped in leaves till the whole reaches the bulk of a child's head. The object of this was not clear. The women, who appear short, especially of leg, compared with the men, also wear a perineal band, but in most cases they use over this a grass petticoat that reaches from the waist to the knees. In addition to this they wear a sort of mantle made of a piece of native bark cloth about 2 feet broad and $2\frac{1}{2}$ feet long ; it has a running string along the upper edge, by which it is made to half envelope the head, and is kept in position. They are not rich in ornaments, and the artistic sense is not well developed in them. They do not tattoo, and they have no cicatricial ornamentation : the septum of the nose is pierced, but no one wore anything in it. . . . So many men were without the upper incisors, or without one of them, that it could hardly have been the result of accident."[2]

[1] It is obvious that Sir William does not use the term Papuan in the sense in which it is defined in this paper.

[2] *Annual Report*, 1896–1897, Appendix C, p. 7.

Addendum I.

The Agaiambo.

Nothing is known concerning the population of the lower mountains on the northern side of the main range or of the northern foothills, though Mr. Monckton has told me of small moderately light-coloured hill-men who until recently raided the Collingwood Bay villages. The Agaiambo inhabit a vast morass inland from Ketakerua Bay, *i.e.*, in the hinterland of the Barigi country, and the discovery of this tribe gave rise to the accounts of "web-footed" Papuans which were widely circulated some years ago.

The Agaiambo have been visited by Mr. Monckton, Sir Francis Winter, and again by Captain Barton. Sir Francis Winter states that they have occupied the swamp for a time that extends back beyond native tradition. "At one time they were fairly numerous, but a few years ago some epidemic reduced them to about forty. They never leave their morass, and the Barugi assured us that they were not able to walk properly on hard ground, and that their feet soon bleed if they try to do so. The man that came on shore was, for a native, middle-aged. He would have been a fair-sized native if his body from his hips downwards had been proportionate to the upper part of his frame. He had a good chest, and, for a native, a thick neck; and his arms matched his trunk. His buttocks and thighs were disproportionately small, and his legs still more so. His feet were short and broad, and were very thin and flat, with, for a native, weak-looking toes. . . . The skin above the knees of the man was in loose folds, and the sinews and muscles around the knee were not well developed. The muscles of the shin were much better developed than those of the calf. In the ordinary native the skin on the loins is smooth and tight, and the anatomy of the body is clearly discernible, but the Agaiambo man had several folds of thick skin or muscle across the loins, which concealed the outline of his frame. On placing one of four natives of the same height alongside the marsh-man we noticed that our native was about 3 inches higher at the hips. . . . The woman, who was of middle age, was much more slightly formed than the man, but her legs were short and slender in proportion to her figure, which, from the waist to the knees, was clothed in a wrapper of native cloth."[1]

Although the Agaiambo speak a Papuan language which Sir Francis says is the same as that spoken by the Barigi, they are not Papuans. This is indicated by their short stature and by their skin colour, which Mr. Monckton tells me is distinctly lighter than that of the true Papuans. They must accordingly be classed as Papuo-Melanesians, but whether as aberrant Massim or as Western Papuo-Melanesians is uncertain. Figures 1 and 2 of Plate XXXIII are full face views of two Agaiambo; Figure 3 is a profile of one of these men.

[1] *Annual Report*, 1902–1903, pp. 14, 15.

ADDENDUM II.

Oblique Eyes in Papuasians.

These were first recorded by O. C. Stone,[1] who, writing of the Koiari, says that in a few "the eyes are *slightly* Mongolian like those of Siamese." I have myself seen oblique eyes among the Koita, the Motu, the Pokao (cf. Plate XXIX, Figures 2 and 3), and at Hula, while Captain Barton has noticed them at Aroma. Oblique eyes are often narrow, *i.e.*, the palpebral fissure is narrow and the epicanthus may be tolerably well marked. Oblique eyes may be associated with curly, wavy, or almost straight hair, but they also occur in individuals with typical frizzly hair as in the Hula youth shown in Plate XXXIII, Figure 4.

Explanation of Plates.

PLATE XXIV.

Fig. 1.—Group of Motu youths. (Capt. F. R. Barton.)
„ 2.—A typical Motu. (Capt. F. R. Barton.)
„ 3.—Young adult of Gaile. (Capt. F. R. Barton.)

PLATE XXV.

Fig. 1.—Ahuia Ova of Hohodai village. (Dr. A. C. Haddon.)
„ 2.—Ahuia Ova of Hohodai village. (Dr. A. C. Haddon.)
„ 3.—A Motu youth from Elevara. (Capt. F. R. Barton.)
„ 4.—A Motu girl of Port Moresby. (Capt. F. R. Barton.)

PLATE XXVI.

Fig. 1.—Man and woman of Hula. (Capt. F. R. Barton.)
„ 2.—Men of Keakalo (Aroma). (Capt. F. R. Barton.)

PLATE XXVII.

Fig. 1.—Men of Keakalo (Aroma). (Capt. F. R. Barton.)
„ 2.—Natives of Roro. (Dr. A. C. Haddon.)
„ 3.—Natives of Roro. (Dr. A. C. Haddon.)

PLATE XXVIII.

Fig. 1.—Men of Waima. (Capt. F. R. Barton.)
„ 2.—Mekeo youths. (Capt. F. R. Barton.)

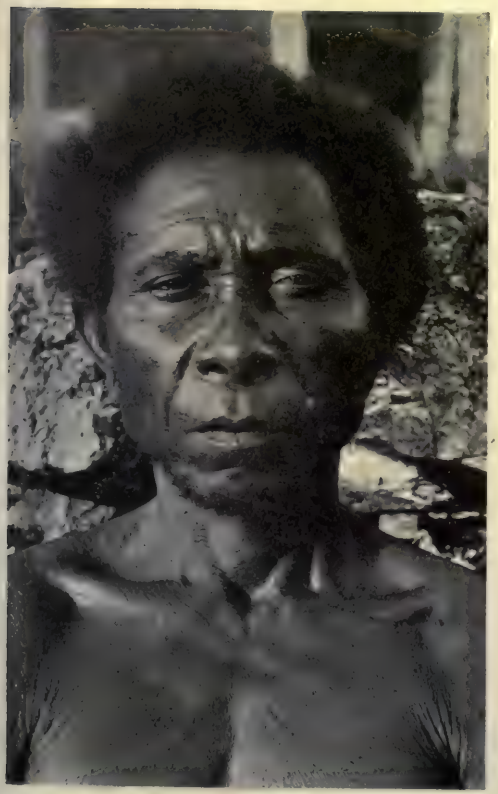
PLATE XXIX.

Fig. 1.—Opungu Ongopaina, chief of Inawi village, Mekeo. (Dr. A. C. Haddon.)
„ 2.—A Pokao woman. (Mr. David Ballantine.)
3.—Pokao boys. (Capt. F. R. Barton.)

[1] *A Few Months in New Guinea.* London, 1880, p. 164.



1. GROUP OF MOTU YOUTHS.



2. A TYPICAL MOTU.



3. YOUNG ADULT OF GAILE.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.



1. AHUIA OVA OF HOHODAI VILLAGE.



2. AHUIA OVA OF HOHODAI VILLAGE.



3. A MOTU YOUTH FROM ELEVARA.



4. A MOTU GIRL OF PORT MORESBY.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.



1. MAN AND WOMAN OF HULA.



2. MEN OF KEAKALO (AROMA).

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.



1. MEN OF KEAKALO (AROMA).



2. NATIVES OF RORO.



3. NATIVES OF RORO.



1. MEN OF WAIMA.



2 MEKEO YOUTHS.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.



1. OPUNGU ONGOPAINA, CHIEF OF INAWI VILLAGE, MEKEO.



2. A POKAO WOMAN.



3. POKAO BOYS.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.



1. A KOIARI OF MEROKA.



3. GARIA MEN.



2. GROUP OF KAGI MEN.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA



1. KUNI MEN.



2. YOUTH OF INAUVORENE.



3. MAN OF NENEBA, MOUNT SCRATCHLEY.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA



1. AGAIAMBO MAN.



2. AGAIAMBO MAN.



3. AGAIAMBO MAN.



4. HULA YOUTH WITH OBLIQUE EYES.

A CLASSIFICATION OF THE NATIVES OF BRITISH NEW GUINEA.

Plate XXX.

Village constables of a number of Koiari villages. (Capt. F. R. Barton.)

Plate XXXI.

Fig. 1.—A Koiari of Meroka. (Dr. H. O. Forbes.)
„ 2.—Group of Kagi men. (Capt. F. R. Barton.)
„ 3.—Garia men. (Dr. C. G. Seligmann.)

Plate XXXII.

Fig. 1.—Kuni men. (Rev. Father Fillodeau.)
„ 2.—Youth of Inauvorene. (Capt. F. R. Barton.)
„ 3.—Men of Neneba, Mount Scratchley. (Capt. F. R. Barton.)

Plate XXXIII.

Fig. 1.—Agaiambo man. (Capt. F. R. Barton.)
„ 2.—Agaiambo man. (Capt. F. R. Barton.)
„ 3.—Agaiambo man. (Capt. F. R. Barton.)
„ 4.—Hula youth with oblique eyes. (Capt. F. R. Barton.)

ETHNOLOGY OF THE ARAUCANOS.

By R. E. Latcham,

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[With Plates XXXIV, XXXV.]

The Araucanos, as the Indians of Southern Chile are generally called, form one of the most indomitable races of which we have any record. During more than three centuries they offered such resistance to the Spanish arms, hitherto invincible in both Americas, that within their territories colonies could only be maintained in the immediate vicinity of walled towns or fortified strongholds. Even the most impregnable of these were time after time razed to the ground, and their inhabitants massacred, by these hardy barbarians.

In a former article[1] I have treated of the principal physical characters of this race, and now propose to give a short sketch of the most striking traits of their daily life.

Many writers have described the manners and customs of the Araucanos, frequently, however, in a superficial way. Among the older Spanish writers, notwithstanding, we have some very important accounts, and of late years two most notable works have appeared treating on this subject, *Aborigenes de Chile*, by José Toribio Medina, and the *Historia de la Civilizacion en la Araucania*, by Tomas Guevara.

My remarks are the result of personal observation during a three years' residence in Indian territory among the tribes of the Cautin valley, and also in the neighbourhood of Angol and Traiguen in the Malleco province. Where the customs seem to have been modified, I have consulted the most reliable of the old authors of the time of the Conquest.

Although the Araucano is extremely conservative and indisposed to change his manner of life, two principal factors have tended to modify considerably his social condition. The first was foreign invasion, and the second, really a corollary of the first, was the introduction of spirituous liquors.

There have been two foreign invasions which have left their indelible mark on the development of the race; the first by the Incas, and the second by the Spaniards.

The former first brought the Araucano into touch with civilisation. From this epoch date his knowledge of domestic animals, of the elements of agriculture, and of such arts as weaving and metal working. This period also sees him first begin to adopt a more sedentary life, constructing rude huts instead of the usual *toldo* or skin tent.

[1] *Journ. Anthrop. Inst*, xxxiv (1904), pp. 170–180.

As Humboldt has so justly remarked, "the most difficult and the most important event in the history of human society is perhaps the change from a nomadic to an agricultural life." This change among the Araucanos was not brought about by any compulsory conditions, but seems to have been adopted gradually by the race on seeing the advantages accruing from the new mode of life, and at first only in a very desultory way.

The Spanish conquest brought with it knowledge of new cereals and plants, other domestic animals, a fuller use of metals, and a considerable change in the tribal government, owing to the necessity of continued union to repel the invader.

The introduction of spirituous liquors did not, for a considerable time, make much headway. The relations between the whites and the Indians were so strained, and the stern, hard discipline of constant warfare so maintained, that the results of this traffic were not for a long time apparent. But after the declaration of the Republican Government, when there were longer lapses of peace, it became a lucrative business, and many large fortunes were made by distilling cheap "firewater" in the frontier districts. To such a degree did this traffic attain that it is a common saying in the south that the distillers did in a few years what the Spaniards failed to accomplish in three centuries—reduced the tameless Araucano. This vice has taken such a hold of the Indian that in general it has completely changed his character and mode of life, and from being a fierce, untiring, vengeful patriot, he has become a drunken, cringing, soulless vagabond, who would sell land, stock, wife, daughters, or his soul itself to indulge in his craving desire for drink.

Clothing.—Prior to the Incasic invasion of the northern tribes the Araucanos led a purely nomadic life as hunters, shifting their *toldos* from time to time as the exigencies of the chase demanded. Their only dress consisted of the skins of wild beasts, sometimes hung as aprons by strips of hide from the waist, or passed cornerwise between the legs and brought up under a waistband. In winter they protected themselves from the cold and rain by long blankets of furs coarsely sewn together, or by guanaco skins, after the fashion of the Patagonians of the present day. In those earlier days, men and women alike wore their hair long and braided into two long plaits, fastened together at the tips by strips of hide. Now, however, this fashion is left to the women, and the men wear a mane, cut off square a little above the shoulders, and bound round above the ears with a bright-coloured worsted band or cotton handkerchief, red being the favourite colour. Formerly, in warfare, and at their principal feasts, the warriors wore the heads of wild beasts as helmets, the skins and tails hanging down their backs, and fastened under the chin by straps. They also fashioned rude sleeveless shirts of the softer skins, using eyeless needles of bone or thorn, and thin strips of hide or vegetable fibre. In some parts they also produced a coarse kind of fibre cloth, employing rushes, fibrous grasses, or the stringy inner bark of certain trees. This was evidently an imported custom, and was probably learnt from the Calchaqui, who inhabited the eastern slopes of the Andes north of the 32nd degree. There

is reason to believe that they had learned the rudiments of spinning and weaving, probably from the same source, before the arrival of the Incas (*circa* A.D. 1450), and that they utilised the wool of the guanacos slain by their hunters in the confection of articles of dress.

The Incas introduced the llama and vicuña into the country, and from that time weaving became a recognised art among the northern tribes, although farther south the possession of a few of these animals was considered as a sign of considerable wealth. But the wearing of woollen clothing did not become generalised till the introduction of sheep during the Spanish occupation. This animal increased rapidly in the fertile plains of Southern Chile, and shortly formed one of the principal sources of riches among the Indians. To-day, cotton cloth is also extensively used.

The dress of the Araucanos, both men and women, consists of two principal garments, the *chamal* and the *iculla* or *macunyi*, both made of coarse native cloth, generally of a dark blue colour. The former is worn by the men in guise of breeches, and consists of a square of cloth passed between the legs with the four corners drawn up under a waistbelt. By the women it is worn draped over the left shoulder, where it is fastened with a thorn, pointed bone, or a silver pin. Passing under the right armpit, it envelops the body and hangs to the knee, kept in place by a woollen cord or waist band.

The *iculla* of the women is a smaller square, and hangs from the neck, mantle fashion; it is generally discarded indoors. Since the introduction of cotton goods the men usually wear coarse shirts of this material; formerly this garment was made of soft skins. Over all they wear the *macunyi* or *poncho*. A handkerchief or strip of coloured wool (*trarilonco*) is bound round the forehead, and completes the ordinary dress.

These Indians go barefoot, and seldom wear the raw hide sandals of the Chilian peasant, although some of those who live in the neighbourhood of the towns, and are brought more into contact with civilisation, occasionally wear boots and hats. The children generally run about quite nude, or at most with a small skin apron, which, however, they discard in their games.

Ornaments.—The Araucanos are not so much given to personal adornment as most savage or barbarian races, although the women show a certain love of display. The most ancient and the most universal of their trinkets are undoubtedly the collars and necklets of bright-coloured stones. They usually employ green or bluish green stones (silicate of copper oxides), such as malachite or azurite, which abound all through the country, calling them *llanca*, a name commonly adopted in Chile to express these ores. Small pieces of these stones polished and perforated were strung on cords of twisted fibres. Those tribes who dwelt near the coast used small shells and coloured pebbles for the same purpose.

The coming of the Incas gave them a knowledge of the use of metal, and both gold and silver were extensively worked for ornamental purposes. These ornaments were mostly simple in form and of rude workmanship, although some

of them show considerable ingenuity in their fabrication. After the Spanish occupation and the settling of missionaries among them, the cross, especially the Maltese, became a favourite design in their silverwork. The chiefs used spurs, bits and stirrups of silver, and frequently adorned their saddles, bridles and whip handles with the same metal.

Owing to the Spaniard's greed for gold, and the dangers to which its display exposed them, this metal became less and less used, but their love for silver ornaments continues up to the present day.

The principal adornments of the women consisted of enormous earrings in the form of a half disc, frequently measuring 6 inches in diameter, bracelets, necklets, collars, head bands, waist bands, and long pins with large heads in the form of discs, half-moons, or ball-shaped. These were used to fasten their mantles. A favourite ornament is a strip of soft hide covered with rows of small silver beads. This is worn either as a head or waist band, and very frequently as a collar. Rings, usually plain silver bands, are frequently worn. Another favourite ornament is the *eli*, or chain pendant, worn suspended by a clasp from the breast, and having small trinkets hung at the extremity.

The Araucano neither daubs his face with paint nor uses tattooing as a means of beautifying his personal appearance, although formerly their war parties painted their faces to strike terror into the hearts of their enemies. The elaborate designs and totem marks used by some of the northern races seems to have had no counterpart among them, and they seem to have had no special identification mark to distinguish them if slain in battle, this task falling to the lot of the women who usually followed the war party not far in the rear.

Habitations.—As I have already mentioned, the primitive dwelling of the Araucano was the *toldo* or skin tent, such as is even now used by the Indian tribes of the Southern Pampas. When they began to lead a more sedentary life, they constructed rude wattle and daub huts, the cross-pieces of which were lashed together with fibrous creepers. These were probably at first circular in form, but finding them too small they afterwards gave them an oval shape, and finally began to build them in their present rectangular design.

The work of building these huts is a great event in the life of the Indians. The construction is not all conducted as one operation, but is generally divided into three stages, each of which gives occasion for a great feast, especially the final one. On this occasion, if the owner is a chief, or is well off, the feast lasts for several days. The first stage is the erecting of the posts and framework; the second the filling-in of the walls; and lastly the thatching of the roof with long coarse rushes.

The huts vary in size according to the necessities of the family, being from 20 to 60 feet in length and from 15 to 30 in width; the walls are about 6 feet in height. They are occupied by the owner, his wives, unmarried children, and sometimes by other children. The children and unmarried men and girls sleep pell-mell, spreading skins on the beaten earth floor where fancy dictates.

The huts of the chiefs and principal men are divided by bamboo screens, each wife having her separate sleeping and cooking place; but among the unmarried the same confusion prevails.

The Indian villages are never large, seldom containing more than a dozen huts, generally fewer. This dislike to congregating in numbers is probably a relic of their old hunting instinct, and dates from the time when their mode of life necessitated an extensive tract of country for the requirements of each family or clan.

The household effects are of the scantiest and rudest description. They use no tables, and their seats are either rough benches or blocks of wood; although the Indian for the most part squats cross-legged on the ground. They make a rude kind of bedstead of four forked sticks, planted in the ground. Two parallel bars are placed in the forks, and a horse or bullock hide is stretched tightly across them and fastened by strips of hide. Their beds consist of piles of sheep skins with the wool still on, or bundles of rushes covered with coarse native-made blankets. Another bundle of rushes or roll of skins forms a pillow, although this latter is frequently wanting.

The native cradle is rather ingenious. It is a kind of basket hung from the roof by cords, generally over the bed of the mother, who can thus swing it without rising.

The cooking utensils consist of coarse earthenware pots of different sizes; and the meals are eaten from roughly hollowed wooden platters with rude spoons of the same material. Their clothes, when not in use, are kept in large hide sacks, suspended from wooden hooks fastened in the uprights of the house. Each wife has her separate fire, cooks the food and attends to the wants of her own progeny.

Although the Araucanos are cleanly in their persons they are not so in their households; and, as in most inferior communities, they form a happy family, the pigs, poultry, dogs, cats, etc., all sleeping under the same roof.

Weaving.—The first material used by the Araucanos in their weaving was the fibre of certain plants and the inner bark of determined trees, especially the *nyocha* (*bromelia landbecki*), which to-day are only utilised for making ropes, baskets, cords, and fishing lines. Now they use the wool obtained from their numerous flocks.

To twist the wool they use a very simple spindle, shaped like a shuttle and about 10 inches long. At the lower end is fixed a perforated stone disc. The wool is taken in the left hand and wound around the left arm, the right hand being used to twirl the spindle and draw out the wool. Their looms are also very primitive and easily constructed, and being adjustable can be used for any sized cloth required. The vertical frame is about 5 feet high, with a series of holes ½ inch in diameter and about 6 inches apart, to allow the regulation of the crossbar which indicates the width of the piece to be woven. The cross-beams top and bottom are fixed to the uprights by wooden pegs, and the top one can be

raised or lowered as desired. Both these cross-bars are provided with rows of tiny wooden pins over which the warp is stretched. The shuttle is long and needle-shaped, and is used alternately with either hand. The weft is beaten down with the same shuttle, or sometimes by a rude wooden comb. When the cloth to be woven is all one colour, the wool is dyed before the weaving begins. When stripes or designs of other colours are to be introduced the web is stretched on the frame, and the parts not to be dyed are bound round very tightly, the binding being sometimes greased. These parts are after carefully given the colour required. The colours principally used are black, blue, vermilion, yellow, and green. The dyes are for the most part vegetable, but some mineral colours and earths are known. The dyes are extremely fast, and retain their bright tints till the garment is worn out.

Skins.—Formerly the whole dress of the Araucano was composed of skins. Now they are seldom used for this purpose, but serve as rugs, beds, saddle pads, etc. They have two ways of preserving and preparing skins, one retaining the hair, and the other converting them into a kind of leather. In the first case, the fresh skin is stretched out on the ground, and pegged down with small wooden pegs, the inner side uppermost. When it is thoroughly dry, it is worked up with the hands and softened. The instrument employed for this purpose is peculiar. It is formed of a forked stick of some hard wood, one leg of which is left longer than the other. The inner surface of the fork is shaved away to form a sharp edge which is also notched. At the joint of the fork a piece of flint, iron, or other hard substance with a rough edge, is fixed as firmly as possible. The instrument is hung to a post by its longer limb, and the skin drawn to and fro in the notch of the fork. This is continued until it is completely softened. In the case of straps and thongs, they are afterwards rubbed with grease to keep them supple and to prevent them from fraying.

To remove the hair from the skin, it is first soaked in wood ashes and water. On being taken out it is scraped with sharp stones, shells or knives, on the inner surface, until the roots are loosened, when the air is plucked out. The skin is then dried and treated in the manner described already.

The principal skins used are those of the puma, guanaco, wild cat, coypu (a kind of beaver), fox, deer, otter, and dog; also sheepskins, and the hides of horses and cattle.

Pottery.—The Araucanos have acquired considerable skill in the fabrication of this article. The Indian territory is rich in different coloured clays, those most used being red, black, slaty blue, ochreous, and white, the red and black predominating.

The pottery is generally made by the women of the family, who use no other tool than a spoon-shaped stick to smooth the surface, which they do by wetting the stick. They fashion their ware by welding with their fingers. The base is formed in a single piece, and the vessel built up by strips of clay being added and worked in. The clay is of sufficient consistency to retain any form given to it. Each layer as it is laid on is smoothed over with the spoon.

The usual forms given to the household ware are those known as pitchers, pans,

and pots. Both the pitchers and the pots are made with two ears or handles, and only differ in their relative diameters. Occasionally the jars or pitchers are given the shape of some animal, usually a sheep, dog, or pig, but are very rudely modelled.

Besides the coarse pottery used for domestic purposes, the Araucanos make a finer kind such as is frequently found in their burying places. The shapes most in use for this ware are bowls and small pitchers. It is made from a fine red clay and generally ornamented with designs of other colours, sometimes painted, sometimes formed of clays of other colours let in like mosaic. The principal colours used for these designs are white and black.

A glaze is given sometimes by the addition of a little ground quartz or felspar, or more commonly by throwing handfuls of salt into the vessels when they are at a red heat. The ovens are simple holes in the ground kept filled with burning embers and ashes, and the cooling is done gradually.

One particular kind of ware, very highly prized among the tribes, is ornamented in a peculiar manner. The design is traced out while the clay composing the vessel is still plastic. Following this design a clean groove is cut about an eighth of an inch deep. The vessel is then baked. On cooling, a fine white clay mixed with powdered shell is pressed into the grooves, and carefully scraped over afterwards to leave a smooth clean-cut surface. The inside is lined with the same mixture, and again set to bake in a fierce fire, which causes the clay in the design to set. This ware is not glazed but is brought to a bright surface by polishing. The designs most used are chevrons, checquers, triangles, lozenges, herring bones, and a kind of fretwork pattern. All the patterns used are composed of straight and parallel lines.

Fire.—There seem to be no special rites connected with fire or its maintenance, although formerly there may have been. The Indian now obtains his fire in the orthodox civilised way, by using matches, or with flint and steel. Occasionally I have seen it produced by the friction of two sticks, one hard and pointed, the other rotten and extremely dry. The pointed stick is rolled rapidly between the hands and works as in a socket, considerable downward pressure being used. A remnant of old usages may be noted in the custom among the Indians of covering up the embers at night with ashes so that they are still smouldering in the morning.

Food.—The food of the Araucano is abundant, nutritive and varied. The country itself produces more than sufficient for his needs; although of late years owing to the settling and colonisation of this portion of Chili, the sale of Indian lands, and their confinement to reserved territories have brought about a considerable modification in their mode of living, and they have found it more necessary to recur to agriculture and the rearing of flocks and herds.

First among the natural products are various classes of tubers, especially the wild potato (*poñi* pronounced *ponyi*). Edible roots are extremely abundant, as also several kinds of wild cereals, from the most important of which, millet (*huegeu*) and rye (*magu*), they make a coarse unleavened bread.

From a plant called *madi* they obtain a sweet oil, considerably used in their cooking.

The immense forests supply them with innumerable fruits and berries, used both for food and for the manufacture of fermented liquors, and also with edible fungi which form a favourite article of diet. The open plains provide them with the wild strawberry (*fragaria chilensis*), small but of exquisite flavour. This plant frequently covers square leagues of ground, but never grows except on virgin soil. But the great staple food, the base of all their subsistence, save among the coast tribes, was the *piñon*, the fruit of the Araucanian pine (*Araucaria imbricata*).

Every year during the autumn months excursions are made by the whole tribe to the pine forests, where they remain until they have collected sufficient for the following year. Each tribe has its own district, inherited by custom from generation to generation and inviolate, by unwritten law, from other tribes, even in time of warfare.

This harvest was formerly of such supreme importance, that all inter-tribal quarrels and warfares were suspended by mutual accord during this period.

The Araucano had always a good supply of flesh and fowl, especially the latter. Among the wild animals used for food were the *huemul* (*cervus chilensis*), the *pudu* (*cervus pudu*), the guanaco, and the *pangi* (*felis concolor*).

The birds were more numerous and included the *vudu* or partridge, pigeons, doves, parrots, numerous kinds of duck, *bandurria, peguen* or wild geese, wild swans, plover, etc. The coast tribes lived principally on fish and various kinds of shellfish.

In modern times they have cultivated maize and *frejoles* (beans), introduced by the Incas, wheat, barley, rye, potatoes and other crops, while their food supply has been greatly increased by the introduction of horses, cattle, sheep, pigs, and poultry.

To this abundance of comestibles is to be ascribed the warlike tendencies of these Indians, who not having to give much heed to their food supply, the fertile soil producing it spontaneously almost everywhere, could indulge freely in the luxury of continual warfare. This also gave them an enormous advantage over the Spaniards in their long campaigns, as the latter were almost entirely dependent on their baggage trains or provision supplies, while the surrounding country catered to the wants of their indomitable foes.

As a condiment they use the *aji* or Chile pepper; salt was obtained from the numerous saline deposits found throughout the country, while flavour was given to their dishes by the employment of wild thyme and wild mint.

Their food is usually cooked in earthenware pots, but many kinds of flesh are roasted, or broiled.

The cooking is done by the women, each wife cooking for her own family and taking it in turns to cook for the husband. Each wife has her own fire and cooking utensils.

The food is served in wooden bowls and platters, the men being served first. They do not use a different bowl or platter for each individual, but the adult males sit round the bowls in groups of three or four, each one helping himself in rotation, beginning with the eldest, or with the guests, if any are present. . Should the visitor be a stranger or a person of consideration he is given a platter to himself. They use wooden spoons for their meals, but latterly the tin or pewter article of commerce has been much adopted. After the men have finished, the women and children partake of the leavings in the same manner.

The platters and spoons are not washed till after the meal. To remove grease they use wood ashes.

A few of their principal dishes are as follows: *ticum coré*, flesh cooked with bruised wheat or maize; *poñi coré*, potatoes and maize; beans or peas boiled with grease, and various other stews in which the *moté* or skinned wheat or maize form the principal ingredient. The coast Indians also use two or three edible kinds of *algæ*.

The favourite meat is horse-flesh, and mutton, half cooked, but they prefer the former, seldom killing their horned cattle, which they keep for commercial and agricultural purposes.

Another common article of fare is the *ulpud*, with which the Indian concludes most of his meals, breaks his fast in the early morning, and which he takes with him on all his journeys. It consists of toasted wheatmeal, and is eaten or drunk with water which any brook or spring supplies.

The Indians take their meals at any hour, but generally at mid-day and sun-down. If they feel hungry at other times, the inevitable *ulpud* is their immediate satisfier.

They have no special names for their meals.

The use of bread antedates the Spanish conquest, and at present they prepare different kinds from all their cereals.

The latter are ground, not by pounding but by rubbing. A little grain is placed on a flat stone, and rubbed with a smaller one, held in both hands; the operator kneeling beside the larger stone and bringing the weight of the body to bear in the operation. The meal is sometimes sifted in horsehair sieves, but is generally used entire.

No ovens are used, but the bread is baked in the ashes in the form of *tortillas* or flat cakes. A primitive leaven is prepared by the old women or children chewing the grain and then leaving it to ferment in water, or in a hole in the ground.

There is very little difference in the foods of the upper and lower classes among the Araucanos, save perhaps the quantity of flesh consumed; nor do there seem to have been any tabooed foods. Men and women eat from a common supply.

Like most other barbarians, these Indians are greatly addicted to drunkenness, especially since the introduction of distilled spirits. They are accustomed to

intoxication from earliest childhood; it being no uncommon thing to see small children completely inebriated. In regard to fermented liquors they are exceptionally well provided, a considerable number of wild fruits supplying them with materials.

After the introduction of cereals they learnt how to prepare a kind of small beer from maize and barley.

The early missionaries planted large numbers of European fruit trees round the old missions, some of which, like the apple, have propagated to such an extent as to form real forests. From the apple the Indians make a kind of cider called *chicha*, making a similar liquor from another fruit called *muchi*.

They also extract a spirituous liquor from several plants, especially the *huingan*.

They make their *chicha* in wooden troughs, pounding the apples with sticks. The juice is mixed with water, and left to ferment for seven or eight days. It is usually consumed at once, as it very quickly turns bad. The *chicha* is usually made by the men, the children gathering the fruit. It is kept in large earthenware jars.

Agriculture.—When the Incas arrived in Chile they found the native races without even a rudimentary knowledge of agriculture. Following their established custom, the Inca Yupanqui imported into the conquered country a large number of *mitmacs*, or colonists from Peru, presumably from the Chincha tribes.

These colonists, mixing little by little with the Indians of Northern and Central Chile, introduced among them the first elements of agricultural and pastoral life.

But even a century later, at the arrival of the Spaniards, those tribes who dwelt to the south of the Bio-bio had not adopted the new state, save in a very limited manner, owing to the abundance of natural products and their continual state of inter-tribal warfare.

Up to the present time the Araucano only takes to agriculture in a desultory fashion, and to provide the mere necessities of life. Their methods are of the most primitive.

Probably the principal reason why the barbarian tribes take to agricultural life with such distaste, is the difficulty of inadequate implements, and the consequent amount of labour entailed by such work, especially before the introduction of domestic animals.

The Araucano, for instance, could see no use in working hard to obtain what the earth gave spontaneously; and as a consequence, so long as his liberty to roam at will was uncurtailed, he showed himself refractory to such a mode of life.

His first implements were extremely modest. A forked stick of hard wood, weighted by a perforated stone, which also served as a handle, enabled him to turn over the ground. This digging-stick was at first used for grubbing up the roots which formed a principal part of his daily food. Another form of digging-stick, which was universally carried by men, women, and children alike, and taken with

them in all their wanderings, had a chisel-like point, generally charred to give it greater resistance.

Later on the plough, first introduced by the Spaniards, was rudely imitated by the Indians. Their first attempt was simply a long-forked pole, the shorter arm of which was pointed. Over the fork a heavy stone was attached, and a short handle added. It was drawn by four or six men.

This form was afterwards modified, by being made in two parts; the body, which was shod with iron at the point, and the pole. The handle passed through both, and was wedged.

This plough is still used, not only by the Indians, but all over Chile, in the more rural parts, and even many of the larger farms still employ it, although the iron plough is rapidly taking its place.

The harrows used consist of a number of thorny branches lashed together and weighted by heavy logs.

Their harvests are thrashed out by troops of mares. A circle is enclosed by palings, the corn is spread on the beaten floor, till the grain is trampled out. It is then winnowed by tossing from one pile to another with wooden shovels.

In the Central and Northern provinces the Indians had learnt the art of irrigation from the Incas, but in the south the frequent rains rendered this unnecessary.

All the lighter work is performed by the women, the men only taking part in the ploughing and thrashing.

Formerly all agricultural and other work was undertaken for the benefit of the family or clan, but now individual rights are gradually being asserted, especially by those Indians who have been most brought in contact with civilised customs.

Among those Indians who live in the forest region, the land is prepared for sowing by burning a piece of the undergrowth, where the larger trees appear in fewer numbers. This operation is frequently performed twice. The smaller roots are then grubbed out, and the ground prepared in the ordinary way.

Before the settlement of the Indian territory by the Chilian Government, it was seldom that the same plot was planted more than once, but of late, since the Indians have become confined to special grounds allotted to them, it has become customary to sow the same plot over and over again, although occasionally they allow a plot to lie fallow.

The Araucano keeps considerable flocks and herds, especially of sheep and brood mares, and occasionally horned cattle. The milk both of the mares and cows is considerably used, but the production of butter or cheese is very little understood.

Religion.—It is extremely difficult to speak with certainty of the religious beliefs of the Araucanos. The Spanish writers of the time of the Conquest did not take the trouble properly to examine or analyse the rites and superstitions of the conquered races, ascribing everything they did not understand, or that did not

accord with their ideas, to the agency of the devil. As a consequence we have no real record of their ideas of religion.

At the present time there is a great admixture of Christian beliefs and customs engrafted on the native superstitions and mode of thought, creating a hybrid paganism the origins of which are often extremely doubtful.

The Araucano, even of to-day, has only a very faint hazy idea of things spiritual. His religious opinions are intensely materialistic, and he endows his deities with a corporal form. In fact, he may be said to have hardly got beyond a state of fetish worship. In the following pages the term spirit is only employed to indicate a supernatural agency, although the Indian ascribes to it in every case a preconceived form. This belief is not exactly the ghost-worship of many of the tribes of North America, animism having little place in their theories. Neither do they believe that all inert objects are endowed with a spirit; considering that such objects may become temporarily the abiding place of an invisible being, but always attributing to it a concrete form.

The Araucanos recognise no supreme being with definite attributes. They have no temples, no idols, no established religious cult, and no priesthood in a religious sense, although they occasionally sacrifice to one or other of their divinities, but without a fixed ritual, and only as a conciliatory or expiatory act.

The basis of their belief is a rude form of nature worship, and all inanimate things are, or may be, the abodes of supernatural beings, malign or beneficent as the case may be, to whom they attribute a concrete form, but who possess the faculty of rendering themselves visible or invisible at will.

This invisibility, according to their belief, extends to their own bodies, for they are convinced that their dreams are the nightly wanderings of their other selves or spirits, to which, however, they assign a material though invisible form. They are not invisible to the *pilli* or spirits of other Indians, and so when they dream of other persons they really believe their *pilli* have met. Thus also when they are attacked by nightmare or delirium tremens, the horrible forms their imaginations conjure up are considered to be real beings.

Their dead, when they return to this earth, generally appear transformed, but corporeal and visible to the *pilli*. This belief that dreams are nothing but the wanderings of their bodies in invisible form, and that those persons dreamt about are really met, is the basis of their ideas of a future state, as they have thus an overwhelming proof that the dead frequently revisit this earth in the form of *pilli* or spirits. In the same manner the material forms given to their good and evil spirits are to be explained.

If we duly remember that dreams and their events are very real facts in their theosophy, then we have the key by which many obscure and unexplained conceptions may be unravelled. It is common to hear one of these Indians relate in the most convinced and matter of fact way his having encountered one or other of these good or evil spirits, and give elaborate details of the meeting and its result. This belief has also led up to another superstition which greatly

affected the individual welfare of the Araucano. Their notion is that no one dies a natural death. Death is due to sorcery, or poisoning, frequently committed by some enemy in his *pilli* form, or some malign spirit, who assumed any shape at will, as that of a snake, lizard, fly, ant, etc., and thus operated with little fear of discovery, or became invisible, although his corporeal body none the less existed.

Death by torture was up till quite recently the fate of anyone convicted of sorcery or of having caused the death of another by occult means. This gave a great power to their *machis* or witchdoctors, whose principal task was the finding out of the sorcerers, and of the discovery of the causes of death. These witchdoctors of savage and barbarian races are generally looked upon as arrant impostors, but according to their lights they are not so to nearly as great an extent as is usually supposed. To understand their point of view it is very important to bear in mind what has already been said about the real and tangible meaning that dreams have to them. The witchdoctor, through his training, mode of life, and natural temperament, is generally a person of a highly strung nervous disposition, to whom the faculty of throwing himself into a cataleptic or hypnotic trance is a second nature. When called in to discover the secret enemy who has caused the death of a certain individual, by the aid of powerful drugs, intensely concentrated attention and severe bodily exercise, he works himself up to such a pitch of nervous excitement that he finally collapses into a state of coma or trance, which frequently lasts for several hours. During this trance, any person or being which passes before his mind's eye is considered to have been the offender and is speedily denounced, there being no appeal from these decisions. Naturally enough, this gives the *machi* an immense power, as it offers him an opportunity for wreaking vengeance on anyone who has fallen into his bad books. But these opportunities are seldom taken advantage of, as it creates a blood feud with the kindred of the accused.

As we have said, the theogony of the Araucanos was a kind of nature-worship, partaking of the principle of demonology, that is, their principal deities were all evil genii to be propitiated, and not benign divinities whose mercy and grace were to be implored. Undoubtedly the principal god in their eyes was *Pillan*, the thunder god, since called *Ngunemapun*. Many persons suppose that these are two separate deities, but after a careful study I believe them to be one and the same, the older *Pillan* having received new attributes after the Indians had come into contact with Christian ideas. At present *Ngunemapun*—Lord of the Earth—has almost entirely replaced *Pillan*, and has absorbed most of the powers of the latter. What is certain is that none of the former Spanish writers mention him, and no knowledge of him was hinted at till the beginning of the nineteenth century. *Pillan* was not only the god of thunder but was also the purveyor of fire, causing the lightning, volcanic eruptions, and the earthquakes, and dwelt in the heart of the volcanoes. He was conceived to be a corporeal deity, one and many at the same time. The chiefs and warriors who fell in battle became in some unexplained way absorbed into *Pillan*, the former as volcanoes and the latter as clouds. From this

belief a myth sprung up. During a thunderstorm the Indians looked anxiously towards the sky to see which way the clouds were drifting, showing signs of contentment if they were driven towards the north. They supposed that these tempests represented battles between those of their race and their Spanish oppressors. If the clouds drifted southwards they supposed that their people were being driven back, but if on the contrary they were blown in a northerly direction they rejoiced at the defeat of their enemies.

Pillan was served by malignant spirits called *Huecuvus*, who possessed the power of transforming themselves into any shape they wished in order to work evil. To drive them away from their dwellings the Araucanos burnt branches of *canelo*, their sacred tree. To their influences were imputed many of their sicknesses, especially those which were not easily diagnosed. They were, in these cases, supposed to produce invisible wounds with invisible arrows. To them also were attributed all the natural phenomena, when they occurred at inopportune moments, or brought in their train any unfavourable results; as, for instance, rain in harvest-time, blight or diseases in their crops, lameness or sickness among their stock, and in general all those accidents that they could not ascribe to a direct agency. Other servants of Pillan were the *Cherruve*, figured as snakes with human heads. These genii were the originators of the comets and shooting stars, considered to be the forerunners of death, or of terrible calamities to those villages in whose direction they shot.

Another of their deities was *Meulen* (whirlwind), the god of the winds. He was figured as a lizard who disappeared into the earth when the whirlwind broke up.

The moon, *Auchimalguen* (wife of the sun), was their only beneficent deity. She protected and advised them of any disaster, showing them their enemies, and frightening away the evil spirits. This is easily understood when one remembers that night attacks are seldom undertaken on moonlight nights, and that most savages have a great fear of the dark when alone. It also accounts for the faith placed in the signs of the moon, whose phases were always consulted in their principal undertakings. A red moon was considered to be a sign of the death of some important personage. What is curious, especially if we consider their contact with the Incas, is that the sun has no place in their religious beliefs.

Nguruvilu, the water god, or spirit of the rivers and lakes, takes the form of a wild cat, with a long tail terminating in a terrible claw. Any accident that happens to the Indians while in or on the water is attributed to him.

Another god was *Huaillepenyi*, the spirit of the mist. He appeared as a sheep with a calf's head and a seal's hind quarters, and was only seen on the banks of rivers, lakes, or the sea coast. When a child was born deformed in any way, it was put down to his influence.

Among the minor gods or evil spirits may be mentioned the following: *Chonchonyi*, a human head whose ears served as wings, a species of vampire who hovered round the dwellings of the sick. If they were left unguarded he entered

and struggled with them (convulsions). If he conquered he sucked the patient's life blood.

Colo-colo (cockatrice) generated from a cock's egg, caused fever and death by extracting the saliva from his victim. *Pihuechenyi*, or winged snake, sucked the blood of anyone found sleeping in the woods by night.

The *Am*, or ghosts of the dead, who appeared to the living, distinguished from the *Pilli* already mentioned, who were the ghosts or other self of the living. They also believed that their chiefs returned to visit the haunts of their relatives in the form of humble-bees.

All their trials and adversities, even the most trivial, were set down to the malignity of evil spirits.

Religion had very little effect on Araucano morals, and fear of a future punishment was unknown to them. Any kind of worship or religious rite was also unknown, and only in time of great adversity, as of drought, famine or plague, was any offering or propitiatory sacrifice made.

They believed in a future state, but hell had no place in their beliefs. After death they went in an invisible, but corporeal, form to the other world, where the evil spirits had no entry, where there was always abundance, and where they passed their time feasting and drinking and dancing, waited on by their wives, who had either preceded them or would follow after. The same castes were preserved there as on earth, but the poor people and the public women went to another land where it was always cold. Here also there was abundance to eat and drink, but of the poorest quality, and as before the men were waited on by the women. To arrive at their future resting place it was necessary to cross the sea. For this reason the dead are buried facing the west. Before arriving at this happy land they had a long journey to make. So that they should want nothing on this journey, a good supply of provisions, blankets, skins, etc., were buried with the corpse, and a horse was either buried also or slaughtered over the grave.

The island of Mocha was formerly believed to be the starting place for this long trip. Spirits of the dead had to follow a narrow path, guarded by a witch, who collected tribute from all passers. Even now the Araucanos bury some few coins or other objects with the dead to discharge this obligation.

The coast tribes believed that certain witches transformed themselves into whales to ferry them from the mainland to the island, while the inland tribes supposed that they changed into canoes. Many of these beliefs have been modified since the race has been in contact with Christianity, which, however, has made little headway among them, probably because they cannot even conceive of, much less understand, the principal dogmas and tenets of a highly developed religion.

The stories of numerous converts are inexplicable to one who has probed the Indian's mode of thought and state of intellect. At most they can be only nominally Christians, accepting certain moral ideas and outward forms, such as baptism, crosses in their burial grounds, etc., and all that appeals to the senses,

but in the real basis of their ideas they are as pagan as they were three centuries ago. As a proof of this I have seen sacrifices made during a dry season to *Nguruvilu*, the god of rain, by nominal Christians at less than half a mile distance from the Quino mission. It is also shown by their adhering to their old burial customs. They would never consent to the Spanish mode of burial, alleging that to do so would be to leave their dead without resources for their journey to the other world.

It seems to be a futile task to engraft an intensely spiritual religion on a mind that is entirely materialistic, as it only leads from one form of paganism to another. Not that missionary work should be discouraged; on the contrary it is of the highest benefit when properly undertaken, but the only immediate results are from material and moral teaching, and only after long generations can we hope to find practical results from a strictly religious point of view.

There are many legends extant among the Indians referring to the deluge, but these seem to have had reference primarily to local cataclysms, although the early writers attribute to it an universal character.

Medina in his work, *Aborigènes de Chile*, relates a legend that only too clearly bears the imprint of a Christian modification. He says: "A tradition is preserved from immemorial ages by the Indians, that on the site now occupied by the lake of Tagua-tagua, long before the arrival of the Spaniards, existed a beautiful and fertile valley, very densely populated. These people had become so relaxed and degenerate in their customs that God sent two beautiful youths to warn them. On their continuing in their sin the youths were sent a second time. Still no heed was taken of the warning, till God, losing all patience, sent an awful earthquake, which overturned the valley, splitting asunder the rocks, the waters bursting forth and swallowing up the whole valley. From that day to this the people disappeared off the face of the globe."

Here we have a legend, the formation of which is based on strict geological truth, as a brief study of the neighbourhood reveals, but the causes deduced are undoubtedly of a much later date, and are clearly an addition to the original tale, recalling immediately the story of Sodom and Gomorrah. That this part of the legend has not been invented by Indian agency is clear from the fact that none of their deities are attributed with any desire or interest in the goodness of mankind and also that to the Araucano sin has no particular meaning. Nuñez de Piñeda in his *Cautiverio Feliz* states that *dametun*, carrying off a married woman, was considered by them as a sin, as was also stealing and murder. This seems, however, to be a misunderstanding of the term, as these acts were then, as now, considered only as crimes towards the community, and were punished as such, but without it occurring to the Indian that it was wrong in a religious sense. It was not the act itself that was condemned, but the fact of its being committed in one's own or in a friendly clan. On the contrary such an act committed in a strange tribe was considered as perfectly allowable, and generally upheld by arms, if necessary, by the clan to which the offender belonged.

Efforts are now being seriously made to bring this race within the pale of civilisation, and numerous schools and missions, Catholic and Protestant, have been established within their territories, which not only teach them religion and morals, but also instruct them in the rudiments of useful arts and employments.

Superstitions.—It should be clearly borne in mind that the Araucano as compared with the European is still in an infantile stage as regards intellect. These Indians, like all lower races, are very superstitious, and great believers in omens. Many of these superstitions are connected with animals or birds. Any event that does not fall within the scope or comprehension of their senses is regarded as the work of evil spirits. If they notice any unusual act of bird or beast, they immediately conclude that it is possessed. A fox, or puma that prowls round their hut by night, is a witch who has come to see what she can steal. On driving it away they take care to do it no bodily harm for fear of reprisals.

Many night birds are considered as forerunners of sickness or death when they utter their harsh cries in the neighbourhood of a dwelling. It is unlucky to meet thrushes and some other birds. If vultures followed the route of a war party, many of the number would return home, considering slaughter and defeat as inevitable. A fox, crossing the path of a similar party, indicated, by the way it took, the fate of the undertaking. If it passed to the left, they returned home, assured of the uselessness of proceeding. If on the other hand it turned to the right they were convinced of their triumph. When a dog bayed by night, it was a demon prowling round, on the look out to occupy somebody whose owner (*pilli*) was away, that is dreaming; and those that heard it woke their companions, to avoid such a misfortune. If a horse jibbed or shied, it was because some spirit (*huecuvu*) stopped the path, invisible to them, but which the animal could see. Humble-bees were considered as the ghost of some chieftain; frogs were the keepers and purifiers of water. A fire crackling or throwing out sparks announced visitors; sneezing violently while gambling brought them bad luck, as did also the twitching of the eyelids. They also imagine that any portion of the body is endowed with the qualities of the whole. Here we have the reason of their wearing the skins or heads of wild animals; that of the puma to give them strength and valour; of the fox for cunning; of the snake to enable them to crawl unseen among their enemies; eagles' feathers to make them rapid and fearless in the attack. They believe that the wearing of these articles endows the wearer with the qualities they represent.

It is curious to note to what extreme this belief was carried. Among the Huilliches it is a common thing to make their dice from the thigh bone of some celebrated player; while in the Cautin they ornament their horses' bridles with the tail of some celebrated racer.

Some dreams were unlucky. Thus, for instance, to dream of losing a tooth signified death to some member of the family, as did also a black dog or a white *tordo* (blackbird).

Magic and Witchcraft.—As is natural in a race so imbued with superstition and fetish worship, the black art holds a high place in their imagination. Everything not immediately explicable by a natural and visible agency is put down either to evil spirits or to witchcraft. Their thaumaturgy included three class of theurgists; the *huecuvuye* or sorcerer, the *dunguve* or diviner, and the *machi*, witchdoctor or exorcist. This last vocation is common to the two sexes, and has gradually absorbed the other two classes.

The sorcerers were formerly the sacerdotal class, inasmuch as whatever rites, ceremonies, sacrifices or other religious observations took place were performed by them. They wore woman's dress and their hair long and uncombed; dwelt in caves in remote mountainous regions, and were supposed to be in communication with the *huecuvus* (hence their name) over which their arts gave them certain powers, compelling them to work their wills. These beings were held in fear and awe by the people, who attributed to them many of the ills that befell them. They were considered the arbiters of national or tribal welfare, and were consulted on all momentous questions. War was never declared, nor peace offered, except in accordance with their advice.

All those who sought their counsel, took with them considerable presents in payment for their advice or help.

Contrary to the practice of the *dunguves* and *machis*, their incantations and spells were secret and mystic, wrought in the darkness of their caves, and hidden from the eyes of ordinary mortals, although some of their charms were done visibly, such as seeing visions in a bowl of water, and blowing smoke from their mouths in the direction of the dwellings of their enemies. This smoke was regarded as the familiar spirit of the sorcerer, and the direction it took indicated the path the spirit followed. To enter this caste a long apprenticeship was necessary, terminating in a mysterious initiation ceremony.

The caves where these sorcerers dwell are supposed to be guarded by horrible monsters and evil spirits.

After the *huecuvuyes* come the diviners or *dunguves*, who are sometimes the acolytes or apprentices of the former, though not generally so.

The *dunguves* exercise a considerable influence in Indian society, as they are consulted on all doubtful points of social or domestic intercourse, and every-day events. It is they who indicate the author of a robbery, the whereabouts of a missing animal or mislaid object, the probable result of a given enterprise, the perpetrator of any evil happening to the flocks and herds. Their services are paid for in goods. Occasionally also, they are consulted respecting the cause of some mysterious death, but this is generally an attribution of the *machis* or exorcists. Ventriloquism is used by *huecuvuyes*, *dunguves* and *machis* alike. The *dunguves* perform their divinations outside their huts, their familiar spirit answering them from within.

By far the most popular and most consulted of these personalities is the *machi*, who combines in his person the offices of medicine-man, seer, and exorcist.

Of late years he has gradually absorbed the attributes of the higher professions, especially after the final conquest of 1884, since when the Indians have become more peaceful and settled. This profession is common to the two sexes, the learner graduating after a long apprenticeship to some well-established *machi*. The principal accomplishments are a profound knowledge of medicinal herbs, with which the forests and plains abound, a slight acquaintance with surgery, a considerable mastery of simple conjuring tricks, and the talent of ventriloquism. Many never attained to this last art and had resource to darkness and a different modulation of voice, which served the purpose equally well, although it was less dramatic.

The following is a list of the chief instruments of the profession :—

The *queupu* or lancet ; a small pointed flint, similar in shape to a small arrow head, fastened to a wooden handle.

The *troquitue*, a small three-cornered stone which they pretended to pass through the body of the patient. If it came out clean the sick person would recover, but if it were stained with blood, the case was hopeless.

The *cutra*, or stone pipe, which played an important part in their cures.

The *ihue*, or wooden spitting bowl, into which the *machi* expectorated the humours sucked from the body of the sick.

The *troncu*, or dish, in which the remedies were prepared.

The *gatuhue*, or syringe, used for clysters, composed of a bladder and bone tube.

The chief of all, however, and without which no *machi* begins his operations, is the *ralicultrun*, or drum, inside of which are carried small white stones, *lican*, to which healing powers are attributed.

The *machis* are accompanied by two or more helpers or apprentices, *llaucanyi*. During the greater part of the *machitun*, or healing, they play on *pivilcas*, or shrill reed pipes, while the *machi* beats the drum and chants a low monotonous tune, at intervals breaking into a dance and hopping from one foot to the other, swaying his body and head now to this side, now to that, keeping time to the compass of the music. Meanwhile the crowd, who have assembled, keep up a shouting to frighten away the evil spirits that they believe are waiting round the dwelling, to carry off the soul of the sick person.

The curing of the sick is effected partly by exorcisms, and partly by manipulations and remedies.

It has already been mentioned that all diseases and sickness were supposed to be caused by the malevolence of evil spirits or by witchcraft. As a consequence the ceremony of exorcising partakes of the nature of a religious rite, the gods being invoked to combat the influence of the sorcery. It does not strike them as incongruous thus to invoke the aid of their deities against the acts of their own ministers or servants.

The direct cause of the illness is supposed to be either an invisible wound or some extraneous substance introduced into the body of the patient. This foreign

element has to be extracted. For this purpose the *machi* goes provided with a worm, grub, beetle, lizard, or other small creature that can easily be hidden, and made to appear as if taken from the sick person.

If the patient dies, the *machi* saves his responsibility by declaring that he has been poisoned, and then proceeds to discover the poisoner.

To avoid feuds and reprisals, the blame was generally cast on a *huecuvu*, who had taken the form of some living creature, revealed to the *machi* in a trance, but was sometimes imputed to some individual against whom the exorcist had a grudge, or else to a known enemy of the deceased or his family. In such a case a hunt was made for the guilty person, and if caught he was burnt alive. Olivares, one of the Spanish chroniclers, described one of these executions :—

"Three stakes were driven into the ground in the form of a triangle. The victim was tied to one of them, which was stouter than the others, his hands fastened behind his back. His feet were fastened to the other two with thongs thus forcing his legs apart, obliging him to assume a sitting position. A fire was lighted between his thighs, which burnt them, his vitals, breast and face. Meanwhile he was demanded to confess his crime and declare his accomplices."

Guevara adds that they sometimes rubbed the victim's body with fat, to cause him greater torment. This led to reprisals on the part of the relatives, and was a frequent cause of intertribal warfare.

The *machis* have no hard and fast ritual for these ceremonies, but each one introduces the innovations he considers necessary. Their huts are known by the branch of *canelo* planted before the door, from which hangs the drum, symbol of their office.

Paderasty was common among the *machis* and still is to a certain extent, though not so much as formerly. Those who exercise the office are called *hueye*. They do not wear the chamal, but a skin apron, called *punus*, which is a sign of their calling. They wear their hair long, and use feminine ornaments. They were formerly greatly respected for their double functions, but now are despised by many of the Indians.

Under the heading of Ceremonies will be found a more detailed account of the *machitun* or witch hunting.

Morals.—There being no idea of sin, or future punishment for evil doing, religion exercises a very slight influence on the Araucano code of morals. The Indian's ideas of right or wrong must therefore be judged from a standpoint different from those of Christian races. Two facts of the utmost importance must be taken into account in forming an estimate of this question.

First: the wife is considered the absolute property of the husband, and he can dispose of her as he thinks fit, even to killing her, without anyone interfering any more than they would at the disposal of his other property. Secondly: the father possesses the right of life or death over his children, as they are part of his own flesh. If a father slew his child, they said that he was spilling his own blood. The same idea held good if a son killed his father.

When a wife was unfaithful to her husband, he was at liberty to inflict what punishment he thought fit, and could recover from the adulterer whatever value he determined upon, the woman in that case becoming the property of the payer. He could also sell her, or return her to her father as damaged goods, insisting on the price paid for her being given back.

Chastity is not prized among unmarried girls, and few of them are virgins at the time of their marriage. Once married, however, they are generally modest, chaste and faithful.

Violation is not considered a crime, but the violater renders himself liable to pay an indemnity to the father and to take the girl as his wife. Prostitution is common, many women exercising it as a profession, and going from village to village in pursuit of new lovers.

Infanticide is common. Children born with any deformity, or under unlucky circumstances, are frequently slain by their parents.

Neither incest, attempted suicide, nor libel are considered as crimes, while robbery is part of the daily life of the Indian. No stealing is permitted, however, in the clan itself, although as a general rule everything is considered in common.

Armed raids (*malones*) were constantly made on the neighbouring villages, and thus a continual state of warfare was kept up.

Drunkenness is carried to its utmost excess among the Araucanos, and during their feasts the most unbridled licence prevails. They then give themselves up to a sexual promiscuity that respects no condition or relationship, each one taking forcible possession of any woman that strikes his fancy or happens to be nearest at hand.

To this fact may possibly be due the custom of reckoning parentage and descent from the mother's side, it being frequently impossible to determine with any certainty who is the father of a given child. Among some tribes the eldest brother of the deceased inherits at his death, as being more certainly of his blood. This peculiarity attracted the attention of the chroniclers at the time of the Spanish Conquest, throughout America.

A redeeming trait of these Indians is their hospitality. An inhospitable person is generally condemned by public opinion, as sordid and mean. The guest is considered sacred to those under the same roof, and of the same *lov* or clan; and it is the duty of all to protect him and his belongings while he is within their jurisdiction. Any infraction of this rule is severely punished.

The chief virtue among them is that of physical bravery; then come personal endurance, both of pain and hardship, constancy in vengeance, and individual strength.

Laws.—When the Spaniards arrived in Southern Chile, they found the country divided into four natural divisions. The word *mapu*, land, was applied to all of them, being qualified by a distinctive name. *Lavquen-mapu* was the sea-land or coast region, *Lelvun-mapu* or level land was the central valley, *Ina-piva-mapu*

near the snow land, was the region of the lower Andes, and *Pire-mapu*, snow land, the upper ranges.

The error was fallen into of considering these as political divisions, instead of geographical; a mistake in which many later writers have continued. As a matter of fact there was no political organisation, as we understand the term, and the Araucanos recognised no supreme chief, save only in times of great national peril, and then only in a military sense, and by public election. The danger over, they returned to their former customs, the functions of the chief ceasing from the moment the army was disbanded.

The basis of their social and political life is the family, which develops into a clan, and afterwards a tribe, absolutely independent one from the other. The clan itself was called *lov*, the village occupied by it *rehue*, the group of villages inhabited by the tribe *ailla-rehue*, literally nine villages.

The clan or *lov* was governed by the head of the family or *ulmen*, the tribe by the hereditary descendant of the founder or *apo-ulmen*, a contraction of *mapu-ulmen*, chief of the land.

Their villages were small, the third generation generally leaving them to form another, at a short distance away.

The authority of these chiefs descended from father to eldest son, save in the case of physical or mental incapability, when a new chief is chosen, generally another son, brother, or near relative of the deceased.

The authority of these *ulmens* is, however, little more than nominal, and is confined almost exclusively to the direction of their feasts and ceremonies, and in a lesser degree to the political economy of the group.

All important matters are treated in common council by the adult males, the chief presiding at the meeting. No tribute is paid him, neither is he exempt from sharing the daily tasks of the clan, although in a general way he assumes the management.

Both the *ulmens* and *apo-ulmens* are known under the common title of *toqui*, from the stone axe worn round their necks, which is a symbol of their authority and which bears that name. The Spaniards following the custom prevalent through the whole of America gave them the generic name of cacique.

In time of national warfare, the tribes of the different zones or *mapu*, also called *vutranmapu*, united under a general or war chief called *lonco*. This post was usually hereditary during the time of the Spanish wars, although in the beginning the occupant was elected from among the most famous warriors by popular vote.

When the Araucanos began to adopt a more sedentary life, it became necessary to establish more firmly their *admapu* (customs of the land), or code of laws. Their quarrels were formerly settled by an appeal to arms; now however the *ulmen* called together the elders of the clan and they deliberated on the evidence given, and imposed punishment for the crime committed. It was not considered necessary to hear the offender.

In the case of death by sorcery, the guilty were condemned to die by fire in the manner already described.

Murder, maiming, adultery, robbery, or any minor crime were punished by a fine, to be paid by the offender or his relatives. In the case of murder, if the prisoner were poor and unable to pay, he was generally condemned to death, and immediately on sentence being given was led out and despatched with a stone club. It frequently happened, however, that the condemned and his relations offered resistance to the decisions of the council. This almost invariably happened if he belonged to another clan or tribe. The result was a *malon* or sudden attack, and was the source of continual intertribal warfare.

The law of retaliation was the only one understood, although the keen commercial spirit of the Araucano led him to forego personal vengeance for its accruing profit. Thus every injury had its price, which varied with the importance of the offended. The price of a death, and in this case accidental death, or homicide in self-defence, ranked with murder, was that of ten *llancas*, strings of green and black stones, generally silicates of copper. This payment was called *llancatun*. Traitors and kidnappers were also punished with death.

Robbery committed in the same clan or tribe was compounded by a payment in kind, but with considerable increase according to the social position of the offender. If caught in the act he was publicly whipped, sometimes to death.

Adultery was not considered as an outrage to the honour of the husband, but a damage to the feminine property of the offended, and was punished by him at will, either by the death of the wife, or her sale, but most frequently by a heavy compensation by the co-respondent, except in the case of the culpable parties being caught *flagrante delictu* when the husband was within his right in slaying them both.

Parricide, infanticide, wife-murder, intentional abortion, and similar acts committed within the first rank of blood relations were not considered as crimes, it being held that these relations were of the same blood, and that it was allowable for anyone to shed his own blood.

Immorality and indecency, even the most depraved, were not considered as faults, the men and single girls enjoying unquestioned right to dispose of themselves and their bodies as they thought fit, and during their feasts the utmost licence prevailed, absolutely no bonds of relationship being recognised in their drunken amours, even incest being of the most frequent occurrence.

At present the jurisdiction of the tribes is nominally under the charge of the Chilian judicial authorities; but only in extreme cases are these courts appealed to, the Indians still retaining their old customs in the majority of districts, although there is an increasing tendency to recur to these tribunals in all civil cases.

Relationship.—Among the Araucanos, relationship was recognised to the fourth generation. This, and the fact of polygamy being an institution among them, accounts for the fact of the family groups, clans, and tribes, being at times very powerful, a chief's importance, socially and politically, depending directly on the

number of male relations he could muster and on the number of unmarried daughters (basis of future alliances and riches) that he possessed.

Three ranks of relationship were recognised :—

(1) Those of direct ascent or descent : consanguinity.

(2) Collateral ascent or descent :

(3) Relations by courtesy : Marriage relations.

The first class were as follows :

Father, *chau.*

Father's father, *lacu.*

Father's grandfather, *epuchi lacu* = twice grandfather.

Father's great grandfather, *culachi lacu* = three times grandfather.

Father's mother, *cucu.*

Father's grandmother, *epuchi cucu.*

Father's great grandmother, *culachi cucu.*

Mother, *niuke* or *papaī* (*pa-pie*).

Mother's father, *chedchi.*

Mother's grandfather, *epuchi chedchi.*

Mother's great grandfather, *culachi chedchi.*

Mother's mother, *llalla* (*lya-lya*) in the northern provinces and *chuchu* in southern.

Mother's grandmother, *epuchi llalla.*

Mother's great grandmother, *culachi llalla.*

Son, *votem.*

Son's son, *lacu*, same as grandfather by father's side ; really means blood relative (male) once removed.

Son's grandson (always direct male line), *epuchi lacu.*

Son's great-grandson, *culachi lacu.*

Daughter, *niahue.*

Daughter's son, *chedchi.*

Daughter's grandson, *epuchi chedchi.*

Daughter's great grandson, *culachi chedchi.*

The daughter's progeny and their descendants are called by the same names as the mother's ascendants ; *cucu, epuchi cucu, culachi cucu, llalla*, etc.

The collateral relatives were named as follows :—

Brother, *penyi.*

Brother's son, *malyi.*

Brother's grandson, *lacu.*

Brother's daughter, *malyi niahue.*

Brother's granddaughter, *chedchi.*

Sister, *lamgeu.*

Sister's son, *choquem.*

Sister's grandson, *chale choquem.*

Sister's daughter, *malen choquem.*

Sister's grand-daughter, *chale choquem.*
Father's brother, *malyi.*
First cousins male in general, *udam penyi.*
„ „ female, *udam lamuen.*
Second cousins, *epuchi udam penyi*, or *epuchi udam lamuen.*
Father's sister, *palu.*
Mother's brother, *huecu.*
Mother's sister, *niukentu.*

Marriage relations.
Wife's father, *puinyimo.*
„ mother, *nanen.*
„ brother, *vilyica.*
„ sister, *nyadu.*

The collateral relations took the same names :—
Husband's father, *Kempu.*
„ mother, *Llalla.*
„ brother, *ngilyanyi.*
„ sister, *kerun.*

The other relations by matrimony took the names of the corresponding blood relations :—

Stepfather, *pelcuchao.*
Stepmother, *nyenye.*
Stepson, *malyi notem.*
Stepdaughter, *malyi miahue.*
Wife, *cure.*
Husband, *vuta* (*grande*).
Consort (of either sex), *pinyom.*
Mistress, *unyam.*
Children in general, *conyi.*
Natural children, *vuchen.*

In general the Araucano women have limited families, and, owing to the little care their offspring receive, the infant mortality is very great. As soon as they can run about the children are left to their own resources almost absolutely, and from a very early age take an active part in the licence and debauches of their parents. Owing to the continual warfare and the desire to bring up robust and warlike descendants, all misformed or delicate children were slain at birth. Twin children were considered unlucky, and either one was brought up in the family of some near relative as their child, or it was killed at once. A child born feet foremost was also considered unlucky.

Marriage Customs.—Polygamy is very generally practised among the Araucanos, the only limit to the number of wives a man may possess being his ability to

provide the purchase price, and to maintain them and their families. Formerly it was common for a chief of importance to have as many as twenty, but now the number rarely passes four or five. The first wife (*onen domuche*) has, however, a certain moral ascendency over the others (*mau domuche*). As a general rule there is little jealousy among the wives, who take it in turns, either daily or weekly, to attend to the personal wants of the husband, as also in sexual intercourse. It is probable that formerly exogamous customs prevailed, but at present the only restrictions imposed are that a man may not marry his mother or sister. What seems to indicate that exogamy was an ancient practice among these Indians, is the fact that all marriage ceremonies begin with the pretended rape, or carrying off of the bride, which of late years has given way to a simple elopement, unless the bride be unwilling, when the older custom is resorted to. The marriage ceremony consists of two parts; the rape (*leventun*), and the payment (*mavun*). Having arranged the price with the father or eldest brother of the girl, the bridegroom arranges the details of the rape. He calls together his male relations, and while one of them goes to the bride's house on some pretext or other, the rest make a sudden attack on the dwelling. This is energetically resisted by all the womenfolk, the men of the household remaining passive spectators. One of the raiders seizes the struggling girl, and none too gently drags her to where the bridegroom is waiting on horseback. Placing her in front of him the latter gallops off to the wood. Here the pair remain for three days, food being taken to them by their friends. After this the bridegroom takes home his bride to the hut he has already prepared for her. This custom of carrying off the bride is only practised in the case of the first wife. A few days later comes the feast of the payment (*mavun*), to which all the relatives of both parties are invited. The price paid varies according to the status of the bride. If she is of superior rank, the payment sometimes reaches as high as ten or twelve animals, cows, mares, or sheep; an approximate value of about £12 to £14 sterling. A poor man obtains a wife of his own class at the cost of a few shillings. If a bridegroom cannot pay at once the whole of the price agreed upon, he lives with his father-in-law till the debt is cancelled. Generally he puts the whole of his relations under contribution, and, as this debt is considered one of honour, it is usually paid in a very short time. If it were not paid within a reasonable period, the father could recover his daughter. The husband could only refuse to pay when the wife died prematurely, and could demand the return of the value given if she abandoned her home.

Marital Customs.—It was a former custom not to permit a woman to give birth to a child within the precincts of the village, as it was considered to cause infectious diseases. She was driven out, on beginning to feel the labour pains, and retired to the banks of the nearest stream or lake. As soon as the child was born the mother stepped into the water and performed the necessary ablutions, returning afterwards to a small hut constructed for the purpose near the *ruca*, which constituted her home. Here she remained a week attended by some

compassionate friend. At the end of this time she bathed again, and returned to her own home, where all her relations and friends were assembled to celebrate a feast in honour of the babe. These customs are at present considerably modified, and the birth takes place in the *ruca* itself. The mother takes up a kneeling posture during labour, holding on by a thong fastened to a post. She is attended by her friends, and a midwife (*clputrave*) assists at the birth. The men retire outside the hut and receive with laughter and coarse jokes the complaints of the sufferer and the cries of the newly born. After the birth both mother and babe are bathed.

The baptism and naming of the child take place shortly afterwards. Some friend of the father offers himself as godfather (*lacu*), and requests that the babe, if it be a boy, may bear his name, the celebration feast being at his expense. Among other presents he provides a sheep, with the blood of which crosses are made on the forehead and temples of the child. This is an innovation of Christian origin, and dates from the time of the Spanish occupation. In the neighbourhood of the towns and missions the children frequently receive a Christian baptism, and take as names the most common of the calendar, their father's name passing as a surname.

A man does not cohabit with his wife after childbirth till the child is weaned, which does not take place till it has cut all its teeth.

When a man dies his eldest son inherits his wives, together with his other property, and from that moment takes them to wife himself, save only his mother, who recovers her freedom and may marry again. If he leaves no son, his eldest brother inherits and acquires the same rights. Sometimes the wives are distributed among all the brothers of the deceased in order of priority of marriage, the first married to the eldest brother, etc., or they can recover their liberty on paying to the heir the price they cost.

Totemism.—Although totemism is not in vogue among this race at the present day, there is reason to suppose that it was so at no late period.

The probability of exogamous marriage customs having formerly existed has already been referred to.

The custom, at one time universal, of giving children the names of animals, birds, or inanimate objects seems to indicate that these names might have belonged to the clan totem, especially as even recently it was no uncommon thing to find numerous persons in the same family group with the same name, only modified by some distinguishing adjective, as *Nahuel*, tiger; *Nahuelcolu*, red tiger; *Nahuetripai*, leaping tiger; *Luan*, huanaco; *Mariluan*, ten huanacos; *Loncoluan*, huanaco's head; *Vilu*, snake; *Quilavilu*, three snakes; *Coluvilu*, red snake, etc., etc. These names have gradually changed into surnames, owing to the custom of giving the children other names at baptism.

The Araucanos believe they originally descended from the animals whose names they bear, but have no clear idea as to whether this descent was on their mother's or on their father's side, although most of them incline to the former.

The corporeal forms which they assign to their divinities also indicate that there has been formerly an animal worship, which was possibly only a transition from totemism, and may have originated in some form of ancestor worship. Thus the *Cherruve* are represented as serpents with men's heads, *Meulen* as a lizard, *Nguruvilu* as a wild cat with a serpent's tail, *Huaillipenyi* as a sheep or llama with a calf's head, *Pichuichenyi* as a winged snake, etc., etc. These double-natured or hybrid conceptions probably represent the clans among which intermarriage was most common. For instance, the wild cat clan could marry into the serpent's clan, and *vice versâ;* the new community thus formed would be represented by the *Nguruvilu.*

In the course of time the founder of a family, especially if it became a powerful one, would be regarded as a hero, after which it was but a step to his apotheosis.

The custom of painting the face and body before entering battle may have had some connection with totemism, although the chroniclers have left us no record in this respect, contenting themselves with calling attention to this custom. At present, however, totemism seems to have given place to shamanism, and the earlier customs have fallen into disuse and oblivion.

Incest is common during the drunken orgies, no relationship being respected. Marriage among kindred and within the clan is common, and no prohibition attaches to the killing or eating of special animals, although there are a few such superstitions among the elders.

Shamanistic bodies now exist, although their origins are wrapped in mystery. Such are the *huecuvuyes,* or sorcerers, the *dunguves,* or diviners, and the *machis,* or medicine men. These groups are supposed to have certain powers over the powers of good and evil. But contrary to most shamanistic societies there is very little cohesion among their members, and no organisation, neither do they recognise any head. Their functions are practised independently, much after the system of the followers of our modern professions. They only recognise each other as colleagues, and each is respected only according to his degree of skill in imposing on the multitude. Their influence is not political, and they take no active part in the government of the tribe, save in times of tribal or national peril. They officiate as priests, however, in the few religious ceremonies that take place among the people.

Cannibalism.—At the time of the Spanish invasion the Araucanos were still cannibals, although now it is nearly a century since the last well authenticated case was recorded. This cannibalism was not general, however, and was only practised on prisoners taken in battle. The occasion was made to serve as a national feast. The prisoner was made fast to the trunk of a tree, where he became for long hours the target for the jibes, jeers and taunts of the multitude. When his tormentors had drunk sufficiently, and had worked themselves into a frenzy, he was subjected to a thousand torments, till his captor rushed forward and hacked off a limb or piece of flesh from where he thought proper with a stone

or shell knife. This was the signal for the rest, who came one at a time, each one cutting off a portion of flesh, until the bones were stripped and life extinct. Men, women and children partook of the feast. The flesh was sometimes roasted, sometimes eaten raw. Before life was quite extinct they opened the breast and tore out the heart, which was passed from hand to hand among the chiefs and captains, each one biting it and sucking the blood and sprinkling it to the east.

In later years this cannibalism was gradually discontinued, although the prisoners of war were still sacrificed. It became the custom to slay them with a stone club, the chiefs biting the heart and sucking the blood as before, after which it was carried round the village in procession together with the head, both stuck on the points of long lances. The flesh was stripped from the limbs and the bones used for making flutes and whistles. The trunk was then thrown out to the dogs and birds of prey. The heads of the enemies slain in battle were cut off and carried in triumph to the villages, where they were afterwards used as drinking vessels in the feasts.

War.—The Araucanos were essentially a warlike race, as their prolonged resistance, of nearly three centuries, to the Spanish arms clearly demonstrates. During this long period their military organisation became much perfected.

When war was declared, one of the *toqui* (war chiefs) sent round a bloody arrow to all the other war chiefs, by a special messenger, who also carried a *quipu* or *pron* of red woollen cords with certain knots tied in it, indicating the time and place of the general reunion. This *pron* contained one cord for each chief invited, and on receiving it he added certain knots to indicate the number of followers he could muster, afterwards sending it on with much secrecy to the next chief. These reunions generally took place in the spring. Here were discussed the causes for declaring war, the arrangements for the coming expedition, the number of warriors each district should provide, and the levies of provisions to be contributed by each *rehue*. Here, too, the general in chief was elected from among the principal *toqui*.

Once the date of the expedition was decided, the preparations were carried on with much secrecy. The warriors were chosen, and practised in gymnastic and warlike exercises daily. A general abstinence, especially from intoxicating liquors and sexual intercourse, was adopted, while great attention was paid to the thorough preparation of arms. When the army was assembled, the general named his chiefs of divisions, who in turn selected their officers, and distributed the *conas* or soldiers.

Before marching it was customary to discuss the plan of campaign, and all its details of stratagems, ambushes, attacks, surprises, etc.

At the time of the Spanish invasion it was the custom to march in disorderly bodies without any attempt at formation; but experience taught them to organise their methods better, and a stricter discipline was established and bodies of scouts thrown out in advance. But no discipline was of avail when some superstitious

incident occurred upon the march, if such were considered inauspicious. The army immediately broke up and returned to camp. All discipline was lost, too, at the moment that booty presented itself. Then it became each one for himself.

Before the arrival of the Spaniards and for some time afterwards, the army was composed entirely of infantry (*namuntu linco*); but later on considerable bodies of cavalry were maintained.

The arms consisted of bows and arrows (*pulqui*), lances (*rengi*), spears (*huaiqui*), slings (*huitruhue*), and clubs (*lonco quillquill*). The bows were small, and the arrows thin bamboos, either sharpened, or with stone heads with serrated edges, and occasionally pointed bones. Sometimes their arrows were poisoned with the juice of the *coliguaya oderifera*. This poison was carried in small stone or earthenware jars, and smeared on the arrow tips immediately before use. The Spaniards applied salt to the wound as an antidote. The lances were long bamboos, from 15 to 20 feet in length, while the spears were about half this length. Both had stone or bone heads, or else were pointed and hardened in the fire. Their clubs were formed from *luma*, an exceedingly hard and heavy wood. They were generally more than 6 feet long, and were shaped with an elbow, like a modern hockey stick. The curved end was frequently spiked with sharp flints. They were used with both hands and were a most dreaded weapon, as no armour resisted a downright blow. The curved end was also used for dragging the wounded from their horses.

According to the testimony of the chroniclers, these Indians were very clever archers, living almost entirely by their skill in the chase. They advanced to the attack in close phalanxes. In the first ranks came the lances and spears, behind them in more open order the archers and slingers. These squadrons seldom numbered more than one hundred men, and were hurled against the enemy in rapid succession, each making its attack, and retiring to give place to a new company. Thus they continually presented a fresh and untiring front.

Later on they became expert in the construction of fortifications. These were generally built on a small hill, four-square in form, and constructed of trunks of trees, planted upright in the ground. Inside this enclosure was a smaller one which formed the real redoubt, arranged in the form of a palisade, with loopholes for archery. For a considerable space outside, the ground was honeycombed with pit-falls and ditches, lightly covered with branches of rushes and turf, at the bottom of which sharpened stakes were planted.

After a victory, a great feast was celebrated. On this occasion the prisoners taken were sacrificed, and another ceremony called the *pruloncon* or head dance was performed. A bushy sapling was planted in the ground and on its branches were placed the heads hacked from the enemies during the battle, each one adorned with flowers and garlands. Round this tree the Indians danced and sang songs of victory, each one chanting his own valiant deeds, and jeering and insulting the remains of their foes.

The disbanding of the army after a campaign took place without any order, each unit taking the nearest route for his home. The same happened after a defeat.

Burials.—All deaths, save those caused by battle or combat, were supposed to be the effects of supernatural causes or sorcery. If a person died from the results of a violent accident it was supposed that the *huecuvus* or evil spirits had occasioned it, frightening the horse to make it throw its rider, loosening a stone so that it might fall and crush the unwary, temporarily blinding a person to cause him to fall over a precipice, or some other expedient equally fatal.

In the case of death from disease, it was supposed that witchcraft had been practised and the victim poisoned. On a death of this kind occurring, the first thing done, if the person were of any rank, was to practise the autopsy (*cupon*), which consisted in opening the side of the deceased, and extracting the gall-bladder to discover the poison used, and also to obtain a clue as to the guilty person. These customs still prevail in a large number of localities.

The gall is emptied into a small earthenware platter, and calcined over a slow fire. The colour of the residue indicates the class of poison used. The colours generally recognised are six in number: white, black, blue, yellow, red, and viscous brown.

The corpse is then hung in a wicker frame, from a *roble* (kind of oak), and under it a fire of green *canelo* wood is kept smouldering till such time as the perpetrator be found and punished.

This evil worker was generally pronounced by the *machi* to be a malignant spirit, who had taken the form of a beast, bird, reptile, or insect, and whose identity was revealed to him in a trance. Frequently these agents are distinguished by some peculiarity or unusual colour which makes it extremely difficult for the relatives to encounter its simile for the sacrifice that is necessary, before proceeding with the burial.

When, as sometimes happened, the *huecuvu* has taken some impossible form, the *machi* allows the interment to take place, sacrificing in its place some other animal, usually a sheep. The coffin is not always of the same pattern or material. Sometimes it is a wickerwork basket, at others a box or shell made from rough hewn slabs, and frequently a tree trunk split in two and hollowed out, each half having the form of a canoe. Originally, the last form may have been intended to provide a means of embarkation to cross over to the island of Mocha, the supposed starting place for their future abode.

When the day is fixed for the burial the whole village, or tribe in the case of a chief, assemble before the hut of the deceased to take part in the mourning and wake. Each one brings some present of food or liquor for the feast, or some offering for the interment.

The lamentations and funeral chants alternate with onslaughts on the provisions and liquors provided for the occasion, and continue that day and the greater part of the night. On the following day the corpse is dressed in its newest clothes,

and placed on a litter adorned with branches of *canelo* and laurel. The litter is borne to the burial ground on the shoulders of four of the nearest male relations. When the procession leaves the house the whole assembly utter shouts and lamentations, which are kept up till the funeral is over.

The graves are dug to the depth of about 4 feet, and are generally square in form.

The presents brought by the mourners are buried with the corpse, together with supplies of food, clothing and arms, to provide for his long journey. A sheep is sacrificed over the grave, and sometimes a horse, or the latter is buried with the corpse if the distance to the coast is considerable. With this sacrifice, the burial proper concludes, but the orgies and feasting continue till the provisions provided are entirely consumed, and sometimes last for several days.

Ceremonies.—The following account is abridged from notes taken on the spot during my stay among these Indians in 1892, when I was fortunate enough to be a personal witness of some of their principal ceremonies.

Culapan (three lions or pumas), head chief or *apo-ulmen* of the *aillarchue* of the upper Cautin, had died suddenly, probably of apoplexy, during a feast in a neighbouring village. This manner of death, so uncommon among the Indians, there being no visible cause to explain it, was immediately set down to witchcraft. The corpse was brought home, attended by the whole population of the *rehue* where the death had taken place.

The *machi*, or medicine man, was sent for, and a summons sent round for all *toquis* of the neighbouring villages to assemble with their *conya*, or braves. The *machi* arrived a little before nightfall. He was dressed after the fashion of the women, and had a puma skin hung round his loins and dragging behind him on the ground. In his right hand he carried a wand about 18 inches in length, covered with snake's skin and garnished with human teeth. Two assistants accompanied him carrying the instruments of his profession.

At sunset a fire of green *canelo* wood was lighted before the door of the *ruca* around which more than a hundred persons gathered. From this fire arose a thick pungent smoke, which completely shrouded the entrance of the hut.

The *machi* took his stand in front of this fire, with arms extended, face upturned, and eyes unblinking for more than half an hour, inhaling without flinching the clouds of suffocating smoke that enveloped him, and seemingly lost to everything around him.

Suddenly he recovered consciousness, and rushed into the hut where the body was laid out on a bed of skins. What he did there, no one could tell, but after a short while he reappeared, showing signs of mental and bodily exhaustion.

The corpse was now brought out and laid on a rude bier near the fire. One of the assistants proceeded to strip it of its garments, after which he made an incision in the side a little above the hip, placing two sticks in the lips of the wound to hold them open. By this operation the liver was disclosed. The gall bladder was taken out, slit open, and the contents received in a small saucer-like

vessel. A few embers were raked together, and the pan placed on them. Every now and then the *machi* would bend over and examine it intently.

The crowd, which was momentarily increasing, sat round at a respectful distance watching the proceedings with profound interest. Only a few of the nearest relatives were allowed within the inner circle, in the capacity of helpers. The whole scene was lighted by numerous torches.

When nothing remained in the saucer but a little sediment, it was taken from the fire, and again carefully examined by the *machi*. This sediment, which I afterwards saw, was of a dark brownish green colour. The examination finished, the *machi* declared that the deceased had died of black poison (*curevunyapue*).

The relatives now insisted on his discovering the poisoner. At first, the *machi* seemed to demur and remained sitting in a crouching posture before the fire, his knees drawn up and his face buried in his hands. It was soon seen, however, that this pretended reluctance was only assumed for the purpose of obtaining greater promises of reward. At length his cupidity being satisfied he took a sudden resolve, and smearing the point of his wand with the residue left in the saucer, he stalked among the ranks of cowering Indians, who now drew apart from each other, none knowing on whom the charge might fall, and although each knew himself innocent, fearful of being considered an accomplice if found conversing with the accused.

Heedless of the commotion, the *machi* moved through the crowd, waving the stick in all directions, and crying aloud in a harsh voice, *Gunemapun alkine cheu melepi huye*—Lord of the earth, where is the wizard? *Penelelmen chi huye*—Show me the wizard.

The Indians prostrated themselves before him, covering their heads with their ponchos, so that they should not be distinguished.

In the course of a quarter of an hour he had made the round of the whole assembly without, however, discovering what he sought. Returning to the fire, he threw on some fresh logs, and then stood for a long while buried in contemplation, while little by little the Indians recovered confidence. At last, he traced a circle on the ground, and stuck his wand upright in the centre. He then took from one of his assistants an earthenware jar, which he also placed within the circle. In this jar he placed a lock of hair cut from the head of the corpse, the parings of its finger nails, and several threads drawn from the garments it had worn at the time of its death. Making several passes over this jar, he finally dropped into it a lighted brand, repeating his former cries. He then drew several rude figures of birds and familiar animals round the outer edge of the circle.

Finding no result, he now seized his drum, and agitated it violently, causing a loud rattling from the stones contained in its interior, his two assistants accompanying him on reed pipes or whistles. In a few moments he began a wild dance, executing the most astonishing capers, jumping into the air, swaying his body from one side to the other, leaping from one foot to the other, meanwhile keeping time to his drum.

By degrees, the dance became more and more furious, the contortions more complicated, and at length he broke out into a wild monotonous chant. This was kept up till human nature could stand no more, and he fell back in a fit, or state of coma, produced by utter exhaustion.

The attention of the crowd now became painful, every one waiting for some sign of returning consciousness. In about a quarter of an hour, the twitching of the limbs told of returning life, and in a short while he suddenly sat up.

When his faculties were a little clearer he again took his wand, and holding it loosely between his fingers, let it drop in the centre of the circle. Naturally, it fell across one of the figures drawn round the edge. In a short time he announced that the chief had been slain by an enemy who had taken the form of a black *caita* (wild bull), and that it was necessary to sacrifice such an animal, when the evil-doer would immediately suffer for his act.

Six young men, near relatives of the deceased, were told off for the hunt, and with very slight preparations, they saddled their horses and disappeared into the night, while the crowd gradually broke up, only the relatives remaining to take part in one of those debauches in which every Indians' reunion terminates.

In the early morning, I took advantage of the comparative quiet to look for and make a drawing of the circle and figures drawn by the *machi* the night before.

The figures were meant to represent respectively, a horse, a partridge, a wild bull, a cock, a puma, and a vulture.

It is peculiar to notice that while all the animals are drawn with two forelegs none of them have more than one hind leg, while all the birds have three toes. The diameter of the circle was about 2 feet.

Soon after sunrise, the corpse was suspended in a wicker basket from a large tree which grew in front of the hut. A fire of green *canelo* was lighted under it and the deceased's wives appointed to look after it.

It was not till the morning of the sixth day that the hunters returned dragging with them, held by two lassoes, a black bull, about two years old. The victim was fastened to stout stakes near the spot where the corpse was suspended, and the whole assembly, which had quickly drawn together on hearing the news, joined in cursing and reviling it.

Meanwhile, the drunken debauch had been kept up without intermittence, and every kind of licence indulged in. The following day was appointed for the funeral. Every one was early astir, and busy in the arrangements for the ceremony.

A coffin was constructed of hewn slabs. The body (*alhue*), black and shrivelled, was taken down, dressed in new clothes, and placed upon a bier (*pilyuay*) constructed of poles, over which a cowhide was stretched. The bier was adorned with branches of *canelo*, their sacred tree, laurel and myrtle.

The chiefs of the villages and the heads of families now brought their presents, consisting of liquors, mantas, chickens, lambs, cheese, milk, corn, cakes or other

articles of food, and laid them on the ground near the corpse. As each one deposited his gift, he uttered loud cries and lamentations, which were taken up and repeated by the women. When everything was ready for the burial the procession was formed. The bier was borne by six of the eldest chiefs, behind whom came the coffin-bearers, the remaining chiefs and near relatives of the deceased. After them followed the wives and general body of the Indians, numbering more than two hundred. From the moment the bier was lifted from the ground the whole assembly began to utter loud cries and lamentations (*avavan*) which were kept up at intervals during the whole ceremony. The procession was headed by the *machi*. The wild bull had already been dragged to the grave, dug by the young men with sharp-pointed sticks and wooden shovels. The cemetery (*eltun*), was situated on a slight eminence about 300 yards to the west of the village. During the march thither, several of the braves (*mocetones*), mounted on their best horses, and tricked out in all their finery, rode round and round the procession, brandishing their lances, and shouting fiercely to drive away the *huecuvus*, or evil spirits. On arriving at the grave the bier was placed near it, and two of the chiefs pronounced funeral orations eulogising the departed. They were frequently interrupted by the howls and sobbing of the mourners. When the orations were finished the bull was sacrificed. Its throat was cut by the *machi*, who caught its blood in an earthenware vessel, which was passed round among the relatives and the blood drunk. The *machi* then cut open the carcase and tore out the heart, which was also passed round. Each in turn gave it a fierce bite and sucked a little of its blood, uttering curses and revilings as he did so. After it had made the round it was placed in a skin bag and hung round the neck of the corpse. The young men had been busy meanwhile skinning the bull. The hide was stretched on the bottom of the grave. The latter was about 8 feet long, 5 feet wide, and 4 feet deep. The coffin was placed on the skin and the corpse laid in it with the head turned toward the west. The cover, a thick slab, was placed in position and kept down by heavy stones, the cries and sobs of the mourners meanwhile increasing.

The presents were all placed in the grave, around the coffin. The grave was then filled in, each person as he passed taking a last farewell of the dead, and throwing in a handful of earth, some sprinkling a little *chicha* (cider) to the four cardinal points. At the head of the grave a *chemamluyi*, or wooden effigy, representing the deceased, was planted. It was crowned by a head-dress resembling in form the silk hat of civilisation. These figures are now frequently replaced by a cross. The favourite horse of the buried chief was slain over the grave, and both it and the carcass of the bull were left there after being slightly covered with earth. The funeral over, the crowd returned to the village, where the feasting and debauchery were kept up for several days, more than one fight occurring, without, however, serious consequences.

The hardihood of these Indians is astonishing. When they fall out they beat and hammer each other with extraordinary ferocity, neither attempting to parry

the blows of the other. One strikes the other full in the face. The latter without immediately retaliating, seems to consider it a point of honour not to show any feeling, but does all he can to increase the other's wrath. "More," he says, "give me more, can't you strike harder? That was a woman's blow. Strike harder." At the same time he advances his face to receive the shower of blows that is sure to follow. When his contender pauses, he repeats his cries and taunts, and if no more blows are forthcoming he proceeds to batter his opponent. When both are tired out they each return to their drinking, as if nothing unusual had happened, as good friends as before, each one extolling his own powers, not, however, alluding to the punishment they had been able to support, but to the number of blows he had been able to strike.

Some little time after the burial of the late chief the Indians again re-united for the election of his successor. This was necessitated by the incapacity of the only living son of the deceased, who under ordinary circumstances should have succeeded his father. He was, however, *entren* and *cutranquetro* (lame and a stutterer), two grave disqualifications in the eyes of the Indians. There were two candidates for the chieftainship, both nephews of the deceased; Loncoguru (Foxhead) and Quilamanqui (Three condors). Both were strong, well made men, and good orators, qualities highly esteemed among the Araucanos. If Loncoguru was the swiftest runner of the tribe, Quilamanqui could hold out longer. Though the horse was not foaled that Loncoguru could not ride, yet who could throw the lasso like Quilamanqui, or swim like him. Loncoguru had fought for two hours with a famous Pehuenche chief and had finally come out victor, but Quilamanqui armed with only a club, had attacked a puma defending her young, and had brought off her kittens, and still wore her skin as a trophy. In such circumstances the election was not easy, and each candidate had a numerous following. The heads of the families, to the number of about one hundred, seated themselves in two long rows, facing each other. Each individual had a jar of cider by his side, which was replenished from time to time by the watchful womenfolk. For about two hours continued a scene hardly to be described. Everyone expressed his ideas at the top of his voice. All spoke together, no one paying the slightest heed to what anyone else was saying, interrupting their discourse only to take long draughts of cider. At last something like order was restored. One of the elder chiefs rose to his feet and addressed the meeting. He was followed by another and yet another. Finally, one of the candidates, Quilamanqui, arose and began a long oration, which lasted for over five hours, and concluded only when the speaker was absolutely exhausted. His opponent next took the floor, but owing to his having probably drunk deeply, while his rival was addressing the assembly, his oratorical powers were completely expended in a little over three hours.

Night had now set in, and most of the Indians were deeply intoxicated, lying around in the utmost disorder. Others who were either of a stronger constitution, or had not drunk so much, were indulging in the most unbridled licence. Many of them seized the first woman who passed near them and staggered off into the

darkness, dragging their struggling companion by the hair, and showering blows upon her if she showed any signs of unwillingness to accompany them. The following morning the sitting was renewed, and a number of small coloured sticks were distributed among the electors. Each man received two, one blue and one red, the colours representing the candidates. The eldest chief went round the assembly with a skin bag, into which each individual dropped one stick, the other being broken and cast away. When the round was completed the sticks were paired and thrown into the fire. After the pairing it was found that there were nine blue ones left over. Quilamanqui, whose colour was thus victorious, was now proclaimed the elected chief. More speeches followed, and the feast was kept up several days longer at the expense of the new chief, who not only assumed the title, but also inherited all his uncle's property, including the wives and unmarried children.









NOTES ON THE ETHNOLOGY OF THE ARAUCANOS.









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THE KUKI-LUSHAI CLANS.

By Lieut.-Colonel J. Shakespear, C.I.E., D.S.O.

The home of the clans with which I propose to deal lies in the tumbled mass of hills separating the plains of Burmah from those of Bengal and extending from the valley of the Brahmaputra to the sea. In 1777 the East India Company's official styled "The Chief of Chittagong" wrote to Warren Hastings, who was the Governor-General, reporting that a disaffecting mountaineer had called to his aid "large numbers of Kuki men who live far in the interior of the hills, who have not the use of fire-arms and whose bodies go unclothed." Lieutenant Stewart in his *Notes on Northern Cachar*, dated 1855, states that the "Old Kukis emigrated from the Jungles of Tipperah, the hilly country south of Cachar, some fifty or sixty years ago," that is about 1800. In 1848 another eruption of Kukis into Cachar took place. These later arrivals were called the New Kukis, and differed in many respects from the old, and strange to say both linguistically and ethnographically the Old Kukis are more closely allied to the Lushais far off to the south, than to the New Kukis, who followed them into Cachar, and with whom we should have expected them to be closely connected.

These Kuki clans are now scattered over a very wide area, being found in the Chittagong Hill tracts, Tipperah, South Sylhet, Lushai Hills, Cachar Naga Hills and Manipur, and the unadministered tracts beyond. Before attempting to describe the people I propose to give a brief history of this dispersion. The term Kuki, like Naga, Shendu, Chin, and many others, is not recognised by the people to whom we apply it, and I cannot give its derivation, but it has come to have a definite meaning, and we understand by it certain closely allied clans, with well-marked common characteristics, belonging to Tibeto-Burman stock. It may be safely said that their ancestors lived for a long time in the strip of country between the Kaladan or Koladyne and the Chindwin rivers, which is almost universally claimed as their place of origin, traditions which are corroborated in several ways.

All these clans practise *jhum* cultivation, that is, they fell a piece of jungle and, when sufficiently dry, burn it and then dibble in the seed, and seldom cultivate the same piece of land for more than two years in succession. They therefore need much room, and the desire for new land, coupled with the fear of stronger clans, has led to the whole race adopting a more or less vagabond mode of

life, which has been made fatally easy by the wide-spread growth of the bamboo, which makes house building, of a certain kind, very simple.

Space will not admit of my giving even an outline of the facts on which I base my conclusions, but after protracted inquiries lasting over fifteen years, I have constructed what I believe to be a fairly accurate history of the Lushais, and believe that the ancestors of all these clans originally lived in small consanguineous communities each under a patriarch or headman. In some of these communities individuals by their skill in war and the chase came to the front and attracted members of other families to their hamlets and became the founders of lines of chiefs.

In other cases the communities remained democratic, in fact the whole race is very democratic, and now that fear of their enemies no longer compels them to live in large villages, they show a great tendency to revert to the ancient system of consanguineous hamlets. At the close of the seventeenth century, what is now the northern part of the Lushai Hills and the southern part of Manipur was occupied by the Thado and Vuite clans under powerful chiefs, while to the south the clans still retained their patriarchal organisation. One of these clans was named Lushei and was destined to supply the motive force which drove hordes of savages into British territory in the eighteenth century. All the Lushei chiefs trace their pedigrees back to Thangura, who is said to have been the son of Burman by a Vuite woman. All these clans set much store by their genealogies, and that of the Lushei chiefs is fairly well established. Thangura is said to have had his first village at Tlangkua, north of Falam. From him sprang six lines of chiefs, Rokum, Zadeng, Rivung, Thangluah, Pallian and Sailo, each of whom has risen to importance in the hills. To the north, east and south were well-organised clans, therefore when the Thangur chiefs required more land for their increasing followers, they naturally moved westwards. There is not space to give even an outline of the movement. It was very slow and proceeded on no prearranged plan, each community when it exhausted the land within reach moving to some other suitable spot, each son of a chief as he grew up taking a few households and setting out to seek his fortune. The Rokum have passed away leaving no traces, the Zadeng, Thangluah and Pallian are now only represented by two or three chiefs ruling wretched hamlets which, but for our protection, would ere this have ceased to exist. Rivung chiefs are still found in Tipperah, and it is almost certain that the Kookie men mentioned by the chief of Chittagong in 1777 were followers of the Rivung, for an account of them written by Rennell, of which a French translation published in Leipsic in 1800 is quoted by Colonel Lewin in his book on the Chittagong Hill tracts, might, with but few alterations, be taken for one of the Lushais of the present day. The Sailo family came to the front last; they trace their descent from Sailova, a great grandson of Thangura, and have crushed all their rivals, developing such a talent for governing that they now hold undisputed sway over representatives of all sorts of clans throughout the greater part of the Lushai Hills.

Now what was the result of this intrusion of the Lushais, under the Thangur chiefs, into the territory already occupied by other clans ? A large number of these, probably those most closely allied to the intruders, speedily joined the Thangurs, some no doubt under compulsion, others simply because food was always plentiful and property fairly secure under the rule of these prosperous newcomers. The descendants of these now form the bulk of the subjects of the Thangur chiefs and may collectively be spoken of as Lushais—the term Lushei being used only for the actual Lushei clan.

Some clans known as the Khawtlang and Khawchhak, that is western and eastern villages, refused to join the Thangurs. Their old village sites are still known by their names, and monoliths commemorating their heroes are still pointed out to the curious. The majority of them fled, one party going round the flank of the Thado villages, or passing between them into Cachar, where they were named the Old Kukis, another becoming tributary to certain chiefs of Thado extraction situated on the southern borders of Manipur, where their descendants are still to be found. Nearly all of these clans, however, left a certain number of people behind them who have become merged in the Lushais. By the middle of the nineteenth century the northern Sailo chiefs had become strong enough to try conclusions with the Thados. The Sailos triumphed and hence the second incursion of Kukis into Cachar in 1848. Another wing of the fugitives entered Manipur territory and were settled on the western border by the Political Agent, Colonel McCulloch, a third party flying from the northern Chins after a sojourn in the Kubaw valley appeared on the eastern border of Manipur, and caused much trouble up to quite a recent date. The impetus given by the Lusheis has not even now expended its force, for just before coming on leave I was inquiring into a series of raids committed by several communities under chiefs of the Thado clan, which after many wanderings are penetrating the unadministrated tracts east of the Naga Hills and Manipur and appearing on the Upper Chindwin.

I have now shown how the Old Kukis come to be more closely allied to the Lushais, having originally been their near neighbours, but in Manipur we find several other clans, Chiru, Kom, Kawlhreng, Purum and Tikhup, which have been settled there for a very long time, and the Aimol and Vaiphei, whose advent synchronises with the incursion of the Old Kukis into Cachar. All these are evidently closely allied to the Lushais and Old Kukis. What the disturbing cause was which set these clans in motion, we shall probably never know ; it may have been simply a desire for fresh land, but once commenced such a movement would naturally go on till the clan came in contact with a more stable government, which could protect them from their more powerful neighbours ; this they found in Manipur. All these clans assert that their forefathers lived far away to the south, some claim kinship with clans still found among the Lushais, for instance, the Chiru claim descent from Chongthu, who gave his name to a clan still found among the Lushais, and this same Chongthu figures in the Thado pedigree, which is fairly well established, and by it Chongthu would appear to have flourished about four hundred

years ago. The first mention of the Chiru in the Manipur Chronicle is in A.D. 1545, which is rather a curious coincidence.

Every clan is divided into families, some of which are again subdivided into branches. The clan names and many of the family and branch names are clearly eponyms, and though in some cases the name seems to be taken from a village site, inquiry will often show that the site was first named after some famous chief, or community.

The Old Kuki clans are generally democratic, but even among them there are certain posts which are either hereditary or which can only be held by members of certain clans. Among the Khâlhreng, the post of headman is not hereditary, but on election the new headman has to sacrifice a pig; may this not be to avert the ill-luck which is expected to follow a deviation from established custom? Among the Chiru the headman has many of the privileges, though none of the prestige of the Lushai chief. In fact, though these clans are really democratic they have in them the germs of a monarchical system; a Lushai chief before our occupation was an autocrat, from whose orders there was no appeal, but if he exceeded the limits set by custom, or was uniformly cruel and unjust, his followers soon deserted him for more tactful rulers. The chiefs of the Thado clan are reputed to have been more despotic, but nowadays we often find that, though their subjects admit their liability to pay certain dues, they live in small consanguineous hamlets, apart from their chief. A Lushai Chief receives two baskets of rice from each household in his village, and also a hind leg of every animal killed in the chase. He appoints some elderly men, styled Upa, to aid him in administering justice and in the management of the village. All cases are settled by this board, in petty matters a small fine is inflicted and retained by the judges, a custom found to prevent undue leniency. In the case of the theft of certain articles such as rice, cloths, guns, brass pots, domestic animals and wild animals, which have been trapped or snared, there is in nearly every clan a fixed fine, which must be paid irrespective of the value of the article taken. Offences against the body were left to be punished by the sufferer or his relatives, but the delinquent among the Lushais could seek safety by entering the chief's house and becoming his *Boi* or slave. Orphans or destitute people could also join the chief's household, getting food, shelter and protection in return for their labour; these could purchase their freedom by the payment of one *mithan*, that is a tame bison.

The Thado clans recognised slavery by purchase, which is unknown among the Lushais. Captives taken in war are called *Sal*; these were the absolute property of their captor.

In all clans it is customary for boys on attaining puberty to cease sleeping in their parents' houses. Among the Lushais and the Kom, Chiru and Ti-khup in Manipur, there are special barn-like buildings in which the young men sleep, and which are also the guest-houses of the village. Women are generally prohibited from entering these. Among the other clans the usual custom is for a few well-to-do persons to provide in their houses sleeping places for a certain number of young

men, who in return assist their hosts and are given by them an annual feast. The Purum have a curious custom, that if a man has a son and a daughter the son must go and sleep in the house of some one who has an unmarried daughter; my informant tells me, "That though they sleep thus they are very careful about their characters." If they are, they are exceptional, for among most of these tribes much freedom is accorded to unmarried girls, as success in the courts of Venus is a sure passport to the Lushai heaven.

The Lushais carried on war by raiding the villages of their enemies; to ambush cultivators was considered unsporting, for as a chief said to me "How can people live if cultivation is impossible?" Head-hunting was never a Lushai pastime; heads of enemies killed in raids were taken, but parties did not go out simply to take a head as among the Thados and Chins. As regards religion, there is a wonderful unanimity of belief in Pathian the creator, who, however, is generally thought to take but little interest in mankind. The Lushais also speak of Khuavang, sometimes as identical with Pathian, sometimes as inferior, but more concerned with men; this deity is probably the Lushai form of Kazang or Kozing, the Chin equivalent of Pathian. Far more important, however, are the spirits of the hills woods and rivers, called by the Lushais *Ram-Huai*, land demons, and *Tui-Huai* water demons, by the Thado-speaking tribes *Tihla* and by others *Rampu*. These are all bad spirits and every misfortune and sickness is due to them, and in appeasing them much of the hillman's time and money is spent.

The Chiru seem to be promoting some of these demons into local divinities. The Thados have two spirits unknown to other clans, *Zomi*, a female ghost, the sight of which is followed by awful misfortunes, unless averted by the immediate sacrifice of a dog, and *Nuaijing mang*, a spirit which lives underground.

Besides these spirits the Lushais believe in the *Lashi*, peculiar beings residing in precipices and controlling wild animals. A Lushai legend tells how a young man out shooting spent the whole day courting a Lashi maiden whom he found weaving at the foot of the precipice, but fortunately retained sufficient control over his feelings to refuse her request to roll up her weaving and follow her into the rock. The maiden, however, bore him no ill will, and at his request summoned an elephant which he shot without difficulty. Among the Vaiphei, Lashi is a one-legged god, almost on a par with Pathian; among the Aimol, he is the tribal god; in both cases the idea of control over the wild animals is preserved and the Vuite sacrificial chant when sacrificing to the domestic god is a prayer for success in the chase. Every clan, except the Ti-khup, who are strict monotheists, believes in a special guardian spirit, to whose sacrifices none but the household must be admitted. The method of performing this sacrifice and the chant used varies in each clan, and the test whether two families belong to the same clan, is whether their customs are identical in these respects. The Lushais call this spirit *Sakhua*, but I have not been able to ascertain what a Lushai's idea of Sakhua is. Perhaps from the following chant used on occasion of the Sakhua sacrifice among the Lushei, it may be possible to arrive at some conclusion. Each line begins with a

long drawn out A——h and ends with A——w, and after each is repeated the refrain, " Accept our sacrifice."

Ah——h. Arise from the village. Aw——w.
And accept our sacrifice.
Ah——h. Arise from the open spaces in the village. Aw——w.
And accept our sacrifice.
Ah——h. Arise from your dwelling places. Aw——w.
Ah——h. Arise from the paths. Aw——w.
Ah——h. Arise from the gathering mists. Aw——w.
Ah——h. Arise from the yam plots. Aw——w.
Ah——h. Arise from Bualchuam hill. Aw——w.
Ah——h. Arise from Khåokåok hill. Aw——w.
Ah——h. Arise from Buhmām hill. Aw——w.
Ah——h. Arise from above the road. Aw——w.
Ah——h. Arise from below the road. Aw——w.
Ah——h. Arise from Vahlit hill. Aw——w.
Ah——h. Arise from Muchhip hill. Aw——w.
The spirits of three more hills are invoked.
Ah——h. Arise from the new village site. Aw——w.
Ah——h. Arise from the shelf over the hearth. Aw——w.
Ah——h. Arise from the village. Aw——w.
Ah——h. Arise from the floor. Aw——w.
Ah——h. Arise from the earth. Aw——w.
Ah——h. Spirits prayed to by our ancestors,
Accept our sacrifice.

Bless Luta's spirit (the householder's name).
Bless us with sons, Bless us with daughters,
Bless us while in bed, Bless us while round the hearth.
Make us to flourish like a sago palm,
Make us to flourish like the *hai* tree.
Bless us while the sun shines,
Bless us while the moon shines,
May those above us bless us, may those below bless us,
Guard us from our enemies, Guard us from death,
Favour us with flesh (may we have success in the chase).
Favour us with the produce of the jungle.
For ten, for a hundred years bless us.
Bless us in killing men, Bless us in shooting animals,
Bless us in cultivating our *jhums*, Bless us in cultivating the beans,
Guard us in the presence of men, Guard us in the presence of animals, Bless us in our old age,
Bless us when our heads are bowed down.
Guard us from the spear, Guard us from the *dao*.
Those whom our grandmothers worshipped guard us.
Those whom our grandfathers worshipped guard us.
Bless us in spite of the faults in this our chant.
Bless us in spite of the faults in this our worship.

Bualchuam Hill is the hill in which the first men built their first village; Buhmām, the hill on which the first bird's nest was built by a crow. The other hills mentioned give a clue to the village sites of the first Lushei chiefs. The omission of a prayer to be preserved from the danger of gunshots, shows that the chant has remained unaltered in spite of the gun having superseded the *dao* and the spear. The mention of beans is a survival of the time when the clan lived on them, and left home where rice would not grow.

The Ram-huai are in some way connected with Sakhua, as the following story shows. It is translated from the original Lushai.

"A man called Dailova, who may be alive now, did not know that it was time for him to perform his Sakhua sacrifice. He and his son went down to fetch rice from the *jhum* house, and slept there among the straw; in the night the boy, feeling cold, went into the *jhum* house and slept among the rice, but Dailova covered himself up in the straw and kept warm. Towards morning two Huais came along, one of whom was called Lianthaonga, and the other Ram-huai called to him, 'Where are you going to, Lianthaonga?' and he replied, 'I am going to Lungzawl.' Then Dailova, from under the straw called out, 'Where are you going to, Lianthaonga?' Then the Ram-huai came into the straw and wrestled with Dailova. When they had finished wrestling it was daylight, so they ate their rice and came home and Ram-huai followed them and wrestled with Dailova. Sometimes the Ram-huai appear as a tiger and sometimes as a man. Dailova kept on saying, 'I will wrestle again with him,' and at last he called out 'I have conquered.' Then the Ram-huai told him that his Sakhua sacrifice was overdue and he performed it at once."

The following account of the doings of one of these Huai was given me by Suakhnuna, one of the most intelligent of the Lushei chiefs:—

"A Ram-huai named Chongpuithanga used to live near the ford over the Sonai; he said he was the servant of the king of the Huai, and was always on the look-out for men along the banks of the river. He spoke through a girl called Ziki, who was often ill, and used to go into trances. He demanded a pig and professed to have caused the deaths of ten persons of the village." The following is another story which the teller fully believed:—"About six years ago, Hminga, of Lalbuta's village, was looking at a *ngoi* (fishing weir) and saw some Ram-huai; these wore the *chawndawl* (head-dress worn by slayers of men) and round these were strings of babies' skulls. On his return home he got very ill and all his family kept on asking him what was the matter, but when he was going to tell them the Ram-huai would seize him by the throat so that he could not tell them. If he managed to say a few words he got a pain in his head. He did not die, but recovered." Again: "A woman of Lalbuta's village went out of her house at night for purposes of nature. Her name was Mangpāmi; she was enceinte. The Huai of the Tuitlin precipice caught her, and forced out the immature child and then carried her off down the rocks. The young men of the village went to search for her, and found her naked in the jungle at the foot of the

precipice, where the Ram-huai had left her. She knew nothing about it. She recovered."

After a sacrifice those concerned in it are prohibited from working for a certain period and sometimes have to remain within a certain area, either in the village or the house; this period is called in Lushai *hrilh* and closely corresponds to the Naga *genna*. Portions of every animal sacrificed are reserved as offering to the Huai; generally these are the extremities and internal organs, but they vary in different sacrifices. They are called *sherh* in Lushai.

The responsibility for deciding what sacrifice is necessary, rests with the wise-man, called variously *Puithiam*, Great knower, *Thempu* or *Khulpu*, who after feeling the sick person's pulse, announces what class of Huai is troubling him and what particular victim is required. There are sacrifices to meet every possible contingency, *Khal*, which are to appease the Huai frequenting the village and houses. This series is only performed by the Lushais. There are five varieties, three of which should be performed after marriage. The kind of Khal required is sometimes shown by dreams; thus if a person dreams of a beautiful stranger of the opposite sex who laughs constantly, the sacrifice of a piglet, *Vawkte-Khal*, is needed; should the dream be repeated, *Ar-Khal*, sacrifice of a fowl, must follow; should a person dream that a tiger bites him, *Kel-Khal*, sacrifice of a goat, must be performed at once or death will ensue.

Dai-bawl, these are to appease the Huai of the jungle and rivers. They are performed by all the clans in very similar ways. The following is a specimen; it is called *Bawl-pui*, or great bawl, and is only performed when others have been performed in vain.

Two small clay figures are made, one to represent a man and the other a woman. These are called *Ram-chaom*. The female figure has a petticoat of *Hnahtial* (a plant which has tough leaves used for wrapping up food to be taken on a journey), and is made to bite the pig's liver.

The male figure is provided with a pipe and a necklace of the liver of the pig which is sacrificed. A small bamboo platform is made, and on it is put a clay model of a gong and other household utensils and sometimes of *mithan*.

The pig's throat is cut and the blood allowed to flow over the platform, etc.

The pig's flesh is cooked on the spot. To take it into the house would bring misfortune. Many persons come and eat it with the Puithiam. If the patient does not die during the performance of the sacrifice or during the subsequent feast he will undoubtedly recover.

An important sacrifice, the knowledge of the charms for which is restricted to members of certain Old Kuki clans, who travel about in search of patients, is called the *Kangpuizam*, and the fee for performing it is about £3.

In front of the house a sort of arbour is made of grass and boughs supported on four sticks; all round this are hung little balls made of split cane rolled up tight. This split cane is said to be much liked by the devils. All round the house

strands of cane are stretched, the ends being tied to the arbour. The devils are supposed to be unable to pass these canes, but travel along them so that the sorcerer has no fear of the devils who are already inside the house being assisted by recruits from the outside. Drinking of beer and reciting of charms goes on during the day, and after dark the sorcerer and his assistants get up on the roof of the sick man's house and commence marching up and down reciting charms and ordering the devils to leave the man, and offering them asylum in the bodies of a goat, pig, and dog which they carry with them. After some shouting and firing of a gun the party sit down on the roof over the front entrance to the house, and the sorcerer commences a long incantation over each of the animals in turn, beating them and stamping on them. Then some of the party come down and the rest retire to the back of the house and each of the animals is brought in turn from the far end of the house, being made to walk on its hind legs to the front and then is thrown down on to the entrance platform ; lastly, a big bough is carried from the back of the house, along the roof and fixed through the roof over the entrance. From this bough a cane is stretched to the arbour. Then all the rest of the party came down and after many incantations and much shouting the animals are sacrificed and eaten by the sorcerer and his assistants, the usual useless portions being hung up in the arbour, for the devils, who are supposed to have been driven either into the animal or along the cane into the arbour.

I have not space to describe the sacrifices to cure barrenness, or the *Naohri*, a series that should be performed once in every person's life in a particular order, or the sacrifices connected with cultivation or those connected with hunting, but must return to general religious beliefs. Besides the spirits already mentioned there are the *Mi-vengtu*, watchers of men, two spirits, one good, constantly guarding each person from harm, and the other bad, ever seeking opportunity to sell him to the Huai. Every person is supposed to have two souls, a wise and a foolish soul, and the struggles between these two account for the unreliability of men. If a man stumbles his wise soul has slumbered and his foolish one has triumphed. The belief in Mi-thi-khua, the dead-men's village, is universal, but that in Pial-ral, beyond the Pial River, an abode of unlimited food and drink and no worry, is not found among the Thado and many of the Old Kuki clans. Every clan believes in some being or beings which guard the road to Mi-thi-khua and trouble the spirits of the departed. Mi-thi-khua is generally said to be a place like this world, only existence there is more troublesome. The following is the Lushai belief.

The first man is said to have been Pupaola, then he died before all those born after him, and shoots at those who have died after him with a very big pellet bow ; but at some he cannot shoot ; *Hlamzuih* he cannot shoot at, *Thangchhua* he may not shoot at. Then he may not shoot at a young man who has enjoyed three virgins, nor at one who has enjoyed seven different young women even if they were not virgins ; but women, whoever they may be, he always shoots at.

They say that there is a road between the Mi-thi-khua and the Rih Lake. To

go there, they say, there are seven roads, but Pupaola has built his house where the seven roads meet. Then after Pupaola has shot them there is a hill called Hringlang Hill, and then there is the Lunglo River (heartless, feelingless, which removes feelings), the water of which is clear and transparent, and the *hawilopar* (look-back-no-more flowers) flourish there. The dead pluck *hawilo* flowers and place them behind their ears and drink of the Lunglo water and have no more desire for the land of the living.

Some clans believe that the souls of the dead are reincarnated in the form of hornets, some say in the form of dew, which if it falls on a person is reborn in his or her child. Hlamzuih, whom Pupaola may not shoot, are the souls of firstborn children who die within a year of their birth. The proud title of Thangchhuah, which carries with it much honour in this world as well as the right to admission to Pial-ral after death, can only be obtained by killing a man and each of the following animals:—elephant, bear, *sambhur*, barking deer, wild boar, wild *metna*, and by giving the feasts enumerated below; but it is well also to have killed a species of snake called *rulngan*, a bird called *vahluk* and a species of eagle called *mu-van-lai* (hawk in the middle of the sky). A Lushai gave me the following account of the journey of Thangchhuah to Pial-ral.

"After death the dead man holds the horns of the *sambhur* while sitting on its head, the *rulngan* will wind itself round him and the horns, the *Mu-van-lai* will try to seize the *rulngan*, but the Thangchhuah can drive them off. That is why they always fly screaming so high in the sky. The *vahluk* shades him by flying above him and also hide him from Pupawla, and thus the Thangchhuah is carried to Pial-ral."

After a death some animal must be sacrificed, apparently as a peace offering to the Huai, otherwise the soul of the departed cannot go to Mi-thi-khua. This idea has led to the custom known as *Ai*. If a man kills an enemy or a wild animal, and does not perform the *Ai* ceremony, the ghost of the dead man or beast will haunt him and he will go mad, if he performs the *Ai* he will own the soul of the deceased man or beast in the other world. The *Ai* of a man requires the sacrifice of a *mithan* and a small pig. The *Ai* of a tiger is an interesting ceremony. The following description was written for me by a Lushai.

Thangbânga shot a tiger and performed the *Ai* ceremony. The night before he must not sleep. A young man cut its tail off, he also must keep awake all night. The next day he performed the *Ai* ceremony, sacrificing a *mithan*. Thangbânga, who was performing the *Ai*, dressed himself up as a woman, smoked a woman's pipe, wore a woman's petticoat and cloth, carried a small basket, span a cotton spindle, wore ivory earrings, let his hair down and wrapped a mottled cloth, which was said to be of an ancient pattern, round his head as a turban. A crowd watched him and yelled with laughter, but it would have been unlucky for him to laugh. Presently he took off his turban and carried it in the basket. Then he took off his woman's disguise and dressed again as a man and strapped on a fighting *dao* and carried a gun. He also took *sailungvār* (white flints) and put them into the tiger's

mouth, while he ate eggs. "You eat the *sailungvar*," he said; "who will swallow them the quicker? I have outswallowed you, you have not swallowed yours. I have swallowed mine. You go by the lower road, I will go by the upper. You will be like the lower southern hill, I shall be like the high northern ones. You are the brave man of the south, I am the brave man of the north," he said, and cut the tiger's head three times with his *dao*. Then the men buried the body of the tiger outside the village. If the tiger has killed men its eyes are gouged out with skewers or needles and thrown away. It is unlucky for the performer to laugh, so he holds a porcupine in his arms; if he laughs by accident they say, "The porcupine laughed." The idea of the performer disguising himself as a woman is that the spirit of the dead tiger may be humbled, thinking that it has been shot by a woman.

Marriage among nearly all the clans, with the exception of those belonging to the Lushai confederacy, is endogamous, as regards the clan, but exogamous as regards the family. When the method of formation of the Lushai confederacy under the Thangur chiefs is considered, it will be seen at once that any restrictions on marriage would seriously have interfered with the fusion of clans which was so necessary for the establishment of their power; therefore we find among the Lushais and clans much under their influence that a man may marry any woman, except his sisters, mother and grandmother; maternal first cousins marry freely, but there is a certain prejudice against paternal first cousins marrying. Among some clans marriage is not strictly endogamous, being allowed with members of some other closely allied clan; among the Chiru and Chawte, another old Kuki clan, the particular family of the clan out of which a young man must choose his bride is decreed by custom, and any young couples that transgress this rule are refused admittance to the family meals.

Marriage in all cases is by purchase. Among the Lushais not only the nearest male relative of the bride but also her aunt, her elder sister, her maternal uncle, a special chosen male and female guardian, all have to be paid certain sums, and traces of this custom are found among many other clans. Should a wife be led astray the Lushai custom decrees that all these various sums are to be repaid to the husband, the co-respondent getting off scot free; among other clans the co-respondent compensates the husband and takes the lady. The former system is found in practice to be more conducive to morality, as under it a woman feels that her fault will bring shame and loss on her relatives and friends, whereas under the latter she becomes a mere chattel, and a husband is often a consenting party.

In nearly all clans the marriage ceremony involves the sacrifice of a cock by the Puithiam, and the binding of the feathers on the young couple. Survivals of marriage by capture are also common, the bridal party being pelted with mud as they go to the bridegroom's house.

After the birth of a child, it is generally the custom that the mother must not leave the house for some days, and among the Lushais neither parent must work for seven days lest the soul of the child, which is supposed to be hovering around

them should be hurt. Among other clans a ceremony called the summoning of the soul is performed within a few days of the birth. On these occasions a fowl is generally sacrificed. The naming of the infant is also usually the occasion for killing a fowl. The name is usually chosen by the maternal uncle, but sometimes omens are consulted. The Chawte drop three grains of rice into a cup of water and if they sink another name must be chosen.

I know of no ceremonies connected with attaining the age of puberty. The ceremonies connected with death and disposal of the dead are various and yet a family resemblance is traceable in them all. Immediately a Rangte has breathed his last all present seize weapons and slash the walls, floor, and roof of the house shouting, " You have killed him, whoever you may be we will cut you in pieces." A party of young men goes off into the jungle and returns with whatever birds and beasts they can kill, which are hung up over the grave.

As a rule Old Kuki clans bury their dead in special cemeteries outside the village, while the others make the grave as near the house as possible. The corpse of a chief, among the Lushais, is enclosed in a hollowed-out log and kept in his house for three months, with a fire burning beside it and his widow is expected to quit it as little as possible. A bamboo tube leads from the inside of the coffin through the floor into the ground, all other openings being plastered up with mud. When nothing but the bones remain, the skull and some of the larger bones are placed in a special basket and kept as long as possible, the remainder being buried. Similar customs are found among several other clans, the coffin generally being placed in a specially prepared house at some distance from the dwelling house. Some clans carry the corpses of chiefs and famous men round the village ; the corpse of a Thado chief is carried in and out of his house seven times. The Vuite dry the corpse in some way and keep up the funeral ceremonies for months, drinking round the corpse and pouring *zu* down its throat. Food, drink, and personal requisites are generally buried with the corpse. In some clans after the interment is completed, the Thempu places a stick in the path a short way from the graveyard and conjures the spirit of the departed not to pass it. In many clans there is an annual feast in honour of those who have died within the year.

The Khawlhreng on this occasion exhume the bones, clean them and replace them after wrapping them in cloths. Every clan places offerings of food and drink over the grave, and kills some animal in honour of the deceased and as a ransom for his soul. Offerings of the first fruits are made to their forefathers by almost every clan.

There are a great variety of festivals, some annual and connected with the crops, others performed for the glorification of the giver of the feast and to ensure his soul obtaining admission into the realms of bliss. Among the Lushais these have been very much systematised. An aspirant for the honour of Thangchhuah must give five feasts in a specified order, the most interesting of which is the *Mi-thi-rawp-lām*, dance of the drying of the corpse.

Three months before the date fixed for the feast, all the young men and girls

of the village start cutting firewood, for cooking the flesh of the animal to be killed. A cane is stretched along from tree to tree beside one of the main approaches to the village for some 500 yards, and against this, on alternate sides, are rested the billets, so that they be thoroughly dry by the time they are needed. As a reward the young people receive a he-goat and a sow which they consume with much merry-making, the skulls being placed on posts at each end of the line of billets. The actual feast lasts four days. On the principal day, besides the slaying and eating of a *mithan*, effigies supposed to represent their deceased relatives are made and attired in the finest cloths and adorned with the best necklaces. These are strapped on a square bamboo frame-work in the centre of which, on a tall pole, is an effigy supposed to represent the progenitor of the clan. The oldest living member of the clan then comes slowly from his house bringing with him a gourd of *zu*, and gives each effigy in turn a little *zu*, muttering a charm as he does so; he arranges his tour so as to reach his own father's effigy last, and when he has muttered his charm and given it the *zu*, he dashes the gourd down on the ground, and, bursting into tears, rushes into his house, whence he must not emerge for a month.

The effigies are then carried about the village by elderly persons, with much shouting and merriment. This is supposed to please the spirits of the departed.

Nearly every clan, while denying that its members have any knowledge of witchcraft, is firmly persuaded that its neighbours practice the black arts.

There are several ways of bewitching your enemy. Colonel Lewin has a tale in which the wizard takes up the impression of a person's foot in the mud and puts it to dry over the hearth, thereby causing the owner to waste away. Clay figures, into which bamboo spikes are thrust, also figure in all cases in which a person is accused of this offence. To cut off a piece of a person's hair and put it in a spring, is certain, unless the hair is speedily removed, to cause his death.

The following translation of a Lushai's account of how mankind first learned the black art is interesting.

"*Dawi* (witchcraft) was known to Pathian. Vahrika also was something like Pathian. Vahrika had a separate water supply and Pathian's daughter was always disturbing it. Vahrika said, 'What can it be?' and lay in ambush. Pathian's daughter came and he caught her and was going to kill her, but she said, 'Don't kill me, I will teach you magic.' So she taught him, and Vahrika taught it all to Keichalla, Lalruanga and Hrang-sai-puia. Then Lalruanga went to court Zangkaki, and Zangkaki, who was a friend of Pathian's daughter, bewitched Lalruanga, who had forgotten his *Dawi bur* (magic gourd), and he said to Chaichim (the mouse), 'Go and fetch my Dawi bur which I put in my basket.' So the mouse went to fetch the Dawi bur and got it, but the Tuiruang (Barak) river rose very high. The mouse took the Dawi bur in his mouth and started to swim over the river. The Dawi bur was washed away by the river till it stuck in the fish trap of the Thlangom tribe, who said, 'What is this?' The Dawi bur was singing like anything. The Thlangoms broke it open. No sooner had they opened it than they

each acquired knowledge of music. Then the Thlangoms were chanting the magic song. Some Mizo natives of these hills, who were passing through the village, also heard the song of those who knew magic. The Mizo saw a man eating rice, 'May you be bewitched,' they said. They bewitched him in his rice eating, and for a year after, whenever he ate cooked rice, it changed into dry uncooked rice, and it swelled inside him till his stomach could not hold it and he died. Thus the Mizo learnt about magic. Now-a-days also there is magic, but those who know it won't teach it without payment."

The only cure I know for a bewitched person is to eat the liver of the person who has bewitched him.

The Lushais believe that certain persons, both males and females, but more generally females, have the power of putting themselves into a trance and are in a state of communication with Khuavang. This power is called *zawl* and persons who possess it are called *Zawlnei*. The method of interrogating a Zawlnei is called Thumvor, and is as follows:—

The Zawlnei being in a trance is given a shallow basket containing rice which he or she holds in one hand while an egg is placed in the palm of the other hand. When the Zwalnei reverses this hand, the egg does not fall. The basket of rice is shaken backwards and forwards, and there appears among the rice the footprint of the animal which it is necessary to sacrifice to ensure the patient's recovery.

The belief in a species of demoniacal possession is very common. Among the Lushais it is called *Khawhring*, and the belief is that Khawhring lives in certain women, whence it issues forth from time to time and takes possession of other women, who falling into a trance speak with the voice of the original hostess of the Khawhring. The following is a translation of a Lushais' account of the origin of Khawhring.

"Wild boars have Khawhring. Once a man shot a wild boar while out hunting. On his return home they cooked the flesh, some of the fat got on to the hand of his sister, who rubbed her head and the wild boar's Khawhring just passed into her. On the next day without any provocation she entered another girl. She took entire possession of her. People said to her, 'Where are you going to?' She replied, 'It is the wild boar my brother shot.' 'Well, what do you want?" they said. 'If you will give me eggs I will go away," she replied. They gave her eggs and she went. Presently all those who borrowed the *hnam* (a plaited cane band for carrying loads) of the girl with the Khawhring also got possessed. If one with a Khawhring has a daughter, the child is always possessed, so no one wants to marry a person with a Khawhring. Those possessed of Khawhring are most disgusting people, and before the foreigners came they were always killed."

The folk tales of these clans are very numerous; they have a legend of the king of the Tui-Huai or water-demons falling in love with a girl and pursuing her and thus causing a flood; of the sun being swallowed by a mythical being called an *awk*, which caused general darkness and the death of many human beings, the remainder being changed into animals, after which the world was repeopled out of a

hole in the ground. My Lushai friend tells me: "The place whence all people sprang is called Chhinglung. All the clans came out of that place. Then two Ralte came out together and began at once chattering, and this made Pathian think there were too many men and so he shut down the stone. After a short time Thlandropa was going to hold a feast, and told them to call together all the people of the world, and when this had been done he held his feast. They said to the sun, 'Do not shine, because we want our leader the Sa-huai (Loris) to lead us in the dance,' and the sun said, 'All right.' At that time the Sa-huai and all the animals could talk. The bamboo rat beat the drum and they all danced, and in the middle of their fun the sun said, 'Oh, how I do want to look!' and shone out, and all the animals got hot and could not dance any more, so the Sa-huai got angry and quarrelled with the sun and won't even look at it nowadays. There was a great feast of flesh, but Buka the old owl got no meat, so he got angry and went and sat on the bough of a tree, and Zuhrei, the big rat, chaffed him and said, 'Buka has eaten his fill.' Then the owl, being still hungry, got angry and bit Zuhrei. Since that day they have been at war, and if the owl sees Zuhrei he bites him without fail." The point of the allusion to the Ralte is that this clan is famed throughout the hills for the loquacity of its members.

Among the Old Kuki clans in Manipur eclipses are generally ascribed to the sun and the moon being either caught by, or hiding from, Pathian's dog, which was set on to them, because they stole his master's tobacco, or scattered his rice. Lightning is Pathian's axe which he hurls at the lizard which shouts defiance at him from the top of a high tree. The Lushais say that Thlandropa, who gave the feast, married Khuavang's daughter, and gave his gun as her price and the reports of this weapon are what we call thunder. I will conclude with a tale which might almost have come from Uncle Remus's collection.

The tale of Grand-Daddy Bear and the Monkey.

The monkey made a swing and was always swinging in it. One day grand-daddy bear saw him and said, "Oh, monkey, let me have a swing?" The monkey replied, "Wait a minute till I have hung it more securely." Then he climbed up and bit the cane nearly through and jumped down again crying out, "Come on grand-daddy bear, have a swing." The bear got in and began to swing; the cane broke and he fell down. The monkey, intending to eat him, had gone and fetched some cooked rice (to eat with the bear's flesh). But though grand-daddy bear fell down he was not killed. The monkey being terribly afraid said, "Oh, grand-daddy bear, hearing you had fallen I brought some rice for you," and gave him all he had brought.

NOTES ON SOME TIBETAN AND BHUTIA AMULETS AND FOLK-MEDICINES, AND A FEW NEPALESE AMULETS.

By W. L. Hildburgh, M.A., Ph.D.

[With Plates XXXVI–XXXVIII.]

While in Darjeeling in the early part of 1907 I had the opportunity of collecting, through natives with whom I had become acquainted, and who had similarly assisted me during previous visits, the principal part of the information here presented. Darjeeling, lying near to the borders of Tibet, Bhatan, Sikkim, and Nepal, and on a great trade route between those countries and India, has a population composed very largely of non-Indian elements; there is, indeed, a small suburb, below the European town, occupied almost entirely by Tibetans, Bhutias, a mixed stock, and Lepchas, and having a small Lāmaist temple for their use, while in the neighbouring district there are several other temples. On the market days considerable numbers of Bhutias and Tibetans attend the markets, both as buyers and sellers, whilst at these, as well as at other times, pilgrims and itinerant Lāmas also visit the town. From these people I obtained, personally in most cases, and through a Tibetan-Bhutia interpreter in the others, the objects and the accompanying information to which I shall refer.

The amulets in use by these people may, for convenience, be classified in origin as religious, secular, and natural. In the first class we have the amulets by whose aid the gods or demons are constrained to exercise their powers for the benefit of the users of the amulets, or at least to refrain from injuring them, or objects which, through association with sacred things or places, have acquired a certain measure of protective virtue. In the second class we have amulets which have been formed artificially, and which produce their effects by virtue of their shape or their material, and without the immediate intercession of super-natural beings. And in the third class we have amulets formed of natural substances which by their intrinsic virtues, howsoever these may be based, are protective or curative. It is evidently not possible always properly to place an amulet in one of these classes, nor can we always say, from the scanty evidence at hand, to which class the object belongs.

Religious Amulets.

Like the Japanese and the Chinese, to whose forms of Buddhism his own is very closely allied, the Tibetan makes great use of printed charms. These charms are printed from wooden blocks upon, generally, a toughish native paper, or upon

a more or less flimsy cotton cloth, and are carried upon the person, or pasted upon the doors or walls of houses, or hung, to flutter in the wind, from bushes, or poles, or strings stretched from point to point.[1] They often bear pictures of deities, demons, or sacred objects or animals, or of objects connected sympathetically with their intended purposes. The formulæ upon these chatms are generally in Tibetan or Sanskrit; sometimes a Sanskrit formula is used with a transliteration into Tibetan beneath it, and sometimes only the transliteration, perhaps very crudely done, is given. (See Plates XXXVII and XXXVIII.)

These printed charms seem to be available for almost every one, if not for all, of the purposes to which amulets may be applied, and some of them may serve, in addition, as instruments in magical ceremonies. They are used for protection against demons in general, for protection against particular demons of certain quarters or of certain diseases, for protection against the evils that may befall travellers, or against particular mischances, for the attainment of success or good fortune, for the spiritual improvement of their users, and for all manner of other purposes.

Many of the printed charms have sympathetic relations with their intended purposes: thus, for example, a charm against ghosts may bear a picture of a ghost in fetters; one against dog-bite may bear a chained dog; or one to obtain greatness may have an elephant upon it. One of the most curious of these sympathetic relations appears in the explanation, as given me, of a charm bearing, amongst various other symbols, the Zodiacal animals, by whose means the cycle for measuring time is formed. This charm was to be placed upon the door of a house in order to protect all the people of the house, and it was explained to me that they were all mentioned individually upon the charm, by implication, since the age of each was written upon the charm (Plate XXXVII, Fig. 1).

As example of their use as instruments in magical ceremonies may be taken the waving about in the air of a traveller's charm when the traveller is about to cross a river, and its exhibition to the devils of the vicinity; the showing of a charm to the devils in the four directions when a hailstorm occurs in order to cause the storm to depart; and the apparent transference of a disease to a charm placed with rice, the summoning of the devils to the food, with the subsequent throwing away or destruction of the charm.

The paper charms which are to be carried are generally either folded into small squarish packets, which are bound round with coloured threads, or they are placed, often with numerous other objects, in the metal amulet cases commonly carried. The papers bound with threads have these latter arranged neatly in designs: thus, upon three which I obtained together from a Lāma from one of the monasteries at Lhāsa, the threads form on one side a cross and on the other a

[1] See Waddell's *Buddhism of Tibet*, London, 1895, for descriptions and illustrations of various charms of these kinds. Also, *Lhasa and its Mysteries*, by the same author, pp. 85, 86, 87, 173, 174, 175, 268. Also E. Schlagintweit, *Buddhism in Tibet*, London, 1863, both descriptive volume and atlas of plates.

diamond-shape (Plate XXXVI, Fig. 1); on one of these the threads were green and yellow, on the second, green, red, and white, and on the third, black, red, and yellow. Sometimes the threads are arranged in a design like that shown in Plate XXXVI, Fig. 2, based on a square. I was not able to find that the threads had any protective virtues assigned to them based upon the principle of confusion found both in Europe and the Orient, nor that the colours had any significance beyond the usual one of the Buddhist "Five Colours." Small cloth bags just large enough to contain them are often used to protect the charms thus prepared, and occasionally a charm without the thread binding is carried in the same manner.

The charm-boxes, used sometimes to contain the printed charms, are of metal—brass, copper, silver, or the alloy called "Tibetan silver," or gold—often decorated with turquoises, according to the means and fancy of their owners. Some of them are worn as ornaments hung from necklaces upon the breast, others are carried within the clothing. Most of these boxes have the front and back parallel, and are in outline circular or elliptical, or in the form of a pointed arch, or of a square with, sometimes, a triangular projection extending from each edge; others are bean-shaped.[1] Upon the fronts of some of these boxes a mystic character or monogram may be engraved. Others of the boxes, usually the circular or arched ones, have a small glass window in front, through which a small figure impressed upon a tablet, or a picture or other image appears.

These boxes are used to contain many other things in addition to the printed charms; the usual nature of their contents is illustrated by the following examples. The descriptions of the objects are as given me by the persons (the wearers in most cases) from whom I obtained the boxes. I may add, as a word of caution, that some of the native "curio" merchants at Darjeeling are not at all above filling up charm-boxes which they may happen to have for sale, since they find that the unsuspecting globe-trotter prefers what he considers to be the "complete" charm; the things used for filling are generally of a sacred or magical or medicinal nature, but they are brought together haphazard by the seller.

A brass charm-box, in shape like an Indian pointed arch, 5 inches by $3\frac{1}{2}$ inches, worn by a Lepcha. Contents: a coloured image of a Buddha; a dried flower of the deity represented by the image, some dust from the monastery on the Potala Hill at Lhāsa; a paper charm, printed at Shigatse, against sickness, and bearing, amongst other things, the picture of a chained demon; some stones for application to wounds to stop bleeding; and several folded papers containing medicines or charms whose natures and purposes the wearer did not at the moment remember or could not describe.

[1] See Waddell's *Buddhism of Tibet*, pp. 571, 572, for illustrations of some of these forms and the method of wearing them. See also Schlagintweit, *Buddhism in Tibet*, pp. 175, 176, for descriptions of some boxes and their contents; the pointed form is there said to represent a fig leaf. Illustrations of charm boxes are to be found in many books dealing with travel amongst the Tibetans.

A copper charm-box, in shape like an Indian pointed arch, 2¾ inches by 2⅛ inches, worn by a Bhutia Lāma. Contents: a coloured tablet impressed with a figure of Tamdin; a cowry shell for serving the image while worshipping it; a piece of brass marked with an emblem, a four-petalled flower; several grains of a cereal from Lhāsa (said to be protective because of their place of origin); a small piece of brocade (probably part of one of the ceremonial scarves from an idol); a quartz crystal for rubbing beneath the eyes for the cure of eye troubles; a bean, to be eaten for the cure of stomach trouble; and a written paper, probably a charm.

A silver charm-box, circular, 1½ inches in diameter, worn by a woman on a cord carrying also a nine-marked silver disc. Contents (according to a Bhutia man): a cake of earth impressed with the seal of the Grand Tashi Lāma, as given to pilgrims (see *Buddhism of Tibet*, p. 304), which is to be eaten, a little at a time, for the cure of sicknesses; a paper, apparently in Sanskrit and probably referring to the cake of earth; a painted picture, said to have been inserted merely to fill up vacant space; and a peacock feather, said (although in error, I believe) to be merely for improving the appearance of the charm, and not with any protective intention.

A brass charm-box, circular, 1½ inches in diameter, ornamented upon the face with an elaborate scroll design, obtained from a Lāma. Contents: a copper image of a deity, in repoussé; a red stone, from a Lhāsa monastery, to bring good luck; several grains of a cereal, from Lhāsa, and consequently of benefit if carried or eaten; a stamped cake of dust from a temple at Lhāsa, to be eaten by a man when near death, to cause him to go to "the gods' country" instead of to "the devils' country"; three seeds, to be used like the cake of dust; and a piece of paper, said to bear "the signatures of three monasteries" (my interpreter could not confirm the statement concerning this paper).

The part that relics take in all these and similar charms is noteworthy. Not only are things brought from Lhāsa credited with occult virtue because of their association with that holy city, but dust from temples, scrapings from sacred rocks, leaves of sacred trees, the coverings of idols, bits of the robes of re-incarnated Lāmas and other holy men, and even the nail parings and bodily refuse of the Grand Lāma, are similarly honoured.

There is an amuletic ornament worn quite commonly by the Bhutia and Tibetan women, and sometimes by children, near Darjeeling, consisting of a disc of metal bearing a number of dot-and-circle markings. This ornament, generally of silver, copper, bronze, or brass, the metal being apparently without significance, is worn usually suspended from the hair. In the form more common amongst the women who live at, or who come to, Darjeeling, the disc, generally of silver or copper, bears nine dot-and-circle markings, arranged in three groups of three each, above which are two emblems representing the sun and the moon (Plate XXXVI, Figs. 3 and 4). I was told by an informant, upon whom I could generally rely, that the purpose of this amulet was the avoidance of a certain sickness, apparently

epilepsy,[1] and that it was prepared as follows:—A blank is formed in advance, and during an eclipse of the sun by the moon this blank is struck, by the person by whom the amulet is to be worn, three times with an iron hammer, whilst a formula equivalent to "God, come here!" is recited, and finally the blank is taken to a silversmith, who engraves the designs upon it. My informant did not know the meaning of the dot-and-circle markings. According to various bits of information collected from several sources during a previous visit, but which my present informant stated to be incorrect, this amulet is worn to secure good luck in general; the nine dot-and-circle markings are connected in some way with the Nine Planets, and after nine years of wear the efficacy of the amulet departs and it is thrown away or destroyed.[2]

Of the women visiting Darjeeling, some, said to be from Walloong, near the border of Nepal, wear a different form of what appears to be the same amulet. In this the disc, generally considerably larger than in the form just described, is of brass or bronze, and bears only a considerable number of dot-and-circle markings, without the sun and moon emblems. Upon one of those, which I obtained there, are thirty-eight dot-and-circle markings (one of them, apparently, imperfect, its circle being absent); upon another there are thirty-seven dot-and-circle markings (Plate XXXVI, Fig. 5); and upon a third eighteen dot-and-double-circle markings (Plate XXXVI, Fig. 6). Each of these specimens is held by a leather thong, on which, one on each side of the disc, are two long brass spirals. According to the informant previously referred to, these ornaments are for the same purpose as, and are made in like manner to, the form described above.

Amongst natural substances used as amulets are chank-shell and parts of the elephant, the assumed preservative virtues of which are, I think, in part associated with Buddhist conceptions.[3]

I obtained four small pictures, painted upon linen, of Garudas, yellow, blue, green, and red, representing the four quarters, which, I was told, were to be fastened upon the walls of a house in order to preserve the inmates from a certain sickness, apparently a kind of cancer or leprosy; in connection with their employment in this manner Garuda was to be worshipped by the people of the house.

SECULAR AMULETS.

The amulets to be included in this section are those in which the intercession of supernatural beings is not immediately concerned, and which do not act by virtue of properties inherent in the materials of which they are composed. The

[1] This informant had himself suffered for a time from this sickness, but was cured of it by being placed upon a diet of rice and milk, without vegetables of any other kind, or meat, for a long period, during which he worshipped the two devils (one of "fire," one of "water"), who produce the illness, and appealed to them to trouble him no longer.

[2] *Cf.* "Notes on Sinhalese Magic," "Pañcháyuda," *Journ. Roy. Anthrop. Inst.*, vol. xxxviii, p. 195.

[3] *Ibid.*, pp. 197, 198.

amulets described below appear to be of this nature, although further information concerning them may show them to belong rather to one of the other classes.

The charm shown in Plate XXXVI, Fig. 7, is intended to be carried as a protection against lightning. It consists of two metal pieces held together by a leather thong, composed, it was said, of an alloy containing the "Five Metals,"[1] and for that reason protective. Another charm against lightning, which was shown to me, may have been of the same, or of a similar material; this charm had, roughly, the form of a man with one arm upraised, and its virtue was said to be due to its having been made of a piece of a thunderbolt.[2]

Against strains in the arms, arising from the bearing of heavy loads, and as a cure for sore arms, many of the native women porters wear bangles formed of wires of several different metals twisted together (Plate XXXVI, Fig. 8). Bangles of this kind are very often tipped with conventionalised dragons' heads. Two typical bangles are formed respectively of wires of copper, iron, and silver, and of wires of copper, brass, and (Tibetan) silver.

A comprehensive Bhutia charm, to be placed in a house for the benefit of the inmates, is a small painted picture showing an elephant, upon which sits a white hare, upon whose back stands a monkey taking a fruit from a bird upon a tree. On this sympathetic charm the animals are shown in order to secure respectively the following results: the elephant, that the people may become great; the hare, that they may become clever; the monkey, to protect them from demons; and the bird, in order that they may have plenty of food, "because the bird gets plenty of good fruit."

The charm shown in Plate XXXVI, Fig. 10, is formed of cords plaited together, and was reported as being worn by Lāmas against the attacks of demons. If this information, which was all that could be obtained concerning it, be correct, the specimen probably belongs either to the widespread class of charms in which evil intentions are thwarted by the interposition of something requiring numeration or disentanglement, or to that in which magical virtues are imparted to an object and held by knots.

Natural Amulets.

Although both the vegetable and mineral kingdoms are represented amongst the ntaural amulets which I met with, the majority of those amulets are of animal origin. Some of the natural amulets used curatively act by virtue of their effects upon the supernatural agencies causing diseases, while others appear as though they should be regarded merely as medicinal substances believed to have a definite effect

[1] Probably gold, silver, copper, brass and iron; see *Buddhism of Tibet*, p. 426, note 3. *Cf.* also "Notes on Sinhalese Magic," *Journ. Roy. Anthrop. Inst.*, vol. xxxviii, p. 196.

[2] According to the explanation given me an actual thunderbolt or meteorite had served, but it seems to me more probable that the real source of the material was some thunderbolt-shaped ceremonial object, such as a dorje. In a charm box, whose contents were described by Schlagintweit (*op. cit.*, p. 176), there was a piece of copper shaped to represent a thunderbolt, and kept wrapped in red cloth, which was said to be a charm against lightning.

upon certain organs, but merely carried instead of being taken internally. Most of the specimens to be described were obtained from the medicine-sellers, women, of whom there are usually several at the weekly market at Darjeeling, and the descriptions of the objects and their properties are as given by these women, supplemented, occasionally, by remarks of my interpreter, to whom many of the objects were familiar.[1]

Any of the following objects may be carried, for the purpose of protecting their bearers from the attacks of malignant devils:—A foot or a skull of a marmot (*Arctomys caudatus*); a piece of the foot of a badger (*Meles leucura*); a joint of a snake's backbone; the claws of various animals; the teeth of various animals; a tiger's whiskers (Plate XXXVI, Figs. 11 and 12), either with or without the skin.

In addition to these objects there are the following:—A piece of tiger's jaw (Plate XXXVI, Fig. 13) for a child, as a protection from devils; the foot of a certain kind of black wild cat, wrapped in cloth, as a protection from devils of all kinds; the horns and part of the skull of a kind of stag, brought from Sikkim, to be fastened to a door, in order to keep devils from entering the house thus protected.

A monkey's paw (Plate XXXVI, Fig. 14) is carried as a protection from a certain demon (? *Devalarkia*) who causes a terrible sickness affecting the entire body.

A piece of the knee-cap, or of a bone of the frame, of an Indian wild dog (*Cuon primaevus*) is, carried, a protection from all kinds of sicknesses; rubbed into water, which is afterwards drunk by the patient, it cures all kinds of sicknesses.

A section of the male organ of a bear, or of a rhinoceros, tied upon the abdomen, cures affections of the testicles.

A boar's tusk, I was told by a Tibetan Lāma who carried one amongst his valuables, is a protection against all kinds of sicknesses; a medicine-seller from whom I bought two knew of no amuletic properties ascribed to them, but said that boars' tusks were used in magic.

The elephant, probably partly on account of his strength and power and partly because of the Buddhist beliefs associated with him, furnishes amulets both in his ivory and in the hairs from the tip of his tail.[2] The tail-hairs, which are similarly used in both Burma[3] and Ceylon, are set in gold or silver finger rings, and are carried in order to bring good luck, the elephant being "a fortunate animal." In the silver ring shown in Plate XXXVI, Fig. 9, two hairs are set in grooves of the outside, and there are, in addition, a bit of red coral and two turquoises which are probably amuletic.[4]

[1] The scientific names of the animals are taken from Sandberg's *Tibet and the Tibetans*, London, 1906, pp. 292 *et seq.*, as corresponding to the Tibetan names which were given me. In cases where names are not given I have been unable to find the equivalent of the name given me, or have not obtained the native name of the animal referred to.

[2] *Cf.* "Notes on Sinhalese Magic," *Journ. Roy. Anthrop. Inst.*, vol. xxxviii, p. 197.

[3] *Cf.* "Notes on Some Burmese Amulets, etc.," *Journ. Roy. Anthrop. Inst.*, *infra*, p. 397 ff. They are also used as amulets in Africa.

[4] On this point I secured no information. Waddell (*Lhasa*, pp. 348, 349) says that the Tibetans attribute mystic virtues to the turquoise, believing that "it guards against the Evil Eye, and brings good luck and health . . . it warns off contagion, and that when it

In another ring, also of silver, but without stones, three hairs are used; in a third, of gold, two elephant's hairs are set with a hair of (it was said) a rhinoceros.

Thumb-rings of ivory (Plate XXXVI, Fig. 15) are quite commonly worn by the Bhutia men about Darjeeling, and are considered, on account of their substance, to be protective against devils. Ivory objects, such as these, which have been to war and used "to kill a man" (by being used to pull a bowstring, presumably) acquire medicinal properties and are highly valued. One such property is that of curing, by means of a little powder rubbed or scraped from the ivory and administered in butter, a child's disease, apparently diphtheria or something similar. An ivory wrist-guard which I obtained had been used thus medicinally; probably originally intended as a protection from the wearer's bowstring, it had been worn as a protection from the arrows (but not the bullets) of an enemy. This object is about 2 inches long, and is decorated with a number of dot-and-circle markings, the meaning of which the former owner, my informant, did not know. It had been worn by my informant's father, having been brought from Lhāsa many years before by my informant's grandfather, and was the only one of the kind my informant had ever seen.

Chank-shell is much worn as an amulet, probably because of its Buddhist associations.[1] Girls and women of the lower classes wear wrist ornaments, made each of a chank-shell with its tip and interior whorl removed, as a protection and as a means of securing good luck; these ornaments oftentimes are placed upon the wrists of young girls and allowed to remain until the girl's growth makes them impossible of removal without enlargement or breaking. An earring carrying a ring of chank-shell is a favourite amulet of Tibetan men, and is worn especially by Lāmas. A Tibetan layman, who wore an earring of this kind (Plate XXXVI, Fig. 16) told me that he did so, by direction of a Lāma, in order to protect himself from all sicknesses.

A joint of a certain small cane is often worn, amongst the numerous other medicinal charms suspended from the neck, by children, but I was unable to ascertain its specific purpose. A short necklace with such a joint upon it, obtained from a Nepalese child, is shown in Plate XXXVI, Fig. 17.

See also "Fever," below.

Medicinal Substances.

From the medicine-sellers before referred to a number of medicinal substances, for popular use and of the same nature as the amulets which have been described, were obtained. In addition to these substances a number of packets of medicines composed, apparently, mainly of vegetable products, and similar, in their methods of application, to European medicines, were obtained from a former Lāma, educated at

changes colour and blanches, it betokens mischief or sickness, and then they promptly get rid of it for a full-coloured one."

[1] *Cf.* "Notes on Sinhalese Magic," pp. 198, 199. Rockhill, *Land of the Lamas*, London, 1891, p. 110, says, "At Lh'asa a white conch-shell is treasured. They say that when it is sounded there can be seen a faint semblance of the glory radiating from Shenrézig."

Lhāsa and living at some distance from Darjeeling, who is consulted by patients from the whole district thereabout, but since these specimens lie without the province of folk-medicine they are not described below. As in the case of the amulets, the descriptions and intentions of the various substances are as given by their vendors.

For Fever.—The hoof and bones of the foot of the musk-deer are to be finely powdered and drunk in water, as a cure for Plains' fever; or small pills, said to be from inside the testicles (? the musk-sac, since musk acts strongly medicinally) of the same animal are to be drunk in water. The hairs of the musk-deer are carried as amulets curative of fever, often in connection with the use of the medicines to be taken internally.

For Coughs or Sore Throats.—A bone of a large white sea-bird is rubbed in water and drunk, as a cure for a child's coughing sickness. For a cough, there are pills to be taken in hot water. A piece of a tiger's tongue is to be rubbed in water and drunk, for the cure of a throat so sore that swallowing is difficult.

For Maladies of the Tongue.—A piece of rhinoceros' tongue is to be ground in water, which is then used as a mouth-wash (and spat out, not swallowed).

For Stomach, etc., troubles.—A sticky black substance, which is sold in the form of thin discs kept encased in a cylinder of thin wood, is to be eaten as a purgative. A piece of a white substance (apparently some salt) is to be taken, dissolved in milk, as a cure for "hot insides." There are pills to be taken for the cure of stomach rumblings. The skin of a rhinoceros' foot and a piece of entrail from a kind of deer (apparently, from the name, a kind of musk-deer) are to be rubbed together, in water, and drunk as a cure for internal pains in the side. A piece of bone and flesh of a small variety of deer (the carcase of the animal was kept by the medicine-seller for the supply of pieces) is to be boiled in water and drunk, for the cure of troubles causing the excrement to be bloody. For cattle afflicted by a sickness causing their excrement to be bloody, there is a red stone to be rubbed into water. A small loofah, brought from the plains of India, is to be eaten to cure loss of appetite.

For Beri-beri (apparently, from the symptoms described).—A piece of the hoof of an ass (*Equus asinus*, var. *Tibeticus*) is to be rubbed in water and drunk.

For Syphilis.—A solution of sulphate of copper in water is to be used to wash the parts affected.

For Sore Eyes.—A certain stone, brought from Tibet, is to be scraped to form a powder, which is to be rubbed on the eyes.

For Wounds.—An alabaster-like stone is to be rubbed on them, with a little saliva or warm water. A certain blackish mixed substance is to be rubbed in water which is to be used as a lotion.

For Pains.—A piece of tiger's fat is to be rubbed on the part affected, to cure pains in any part of the body excepting the head. A certain vegetable substance is to be cut up and boiled in water, to form a poultice to cure any kind of a pain in the arms or legs.

For Parturition.—A piece of a horn of Hodgson's antelope (*Pantholops Hodgsoni*) is to be rubbed in water and drunk.[1]

For Poisoning.—A piece of one of the scales of a scaly manis is to be placed amongst food suspected of containing poison; should the food be poisonous the dish will break. A piece of a certain kind of wood (or root) is to be rubbed in water and drunk as an antidote for poisoning.

For Miscellaneous Sicknesses.—A dried gekko is to be boiled in water and taken as a cure for any terrible sickness.[2] Wild cats' dung, sold either crude or shaped into forms, is used for the cure of some sickness, the nature of which was not known to the seller.

Nepalese Amulets.

The following amulets are representative of some of those worn by the Nepalese resident in the district about Darjeeling :—

Finger-rings, usually of silver (or Tibetan silver), occasionally of iron, inscribed with the names of Nepalese deities. An iron ring of this kind, in my possession, bears in addition a sun, moon, and star. These rings are sometimes worn by Bhutia and Tibetan women, but whether as amulets or merely as ornaments I could not ascertain.

Teeth or claws of animals. Plate XXXVI, Fig. 19, shows a silver pendant, with the figure of a deity, carrying a claw, a boar's tusk, and an animal's tooth. Plate XXXVI, Fig. 20, shows a copper pendant carrying a pair of claws.

Metal cases, sometimes rough, sometimes well made and ornamented with figures of deities, containing a composition including what appear to be small red seeds.

A joint of cane, such as is shown in Plate XXXVI, Fig. 17, on a cord with turquoise and other beads; this has been referred to above.

A glass piece bearing Arabic (or sham Arabic) characters, imported from Europe, mounted in metal of native workmanship, and strung with beads of agate, glass, and turquoise (Plate XXXVI, Fig. 18).

Description of Plates.

Plate XXXVI.

Tibetan amulets :—

Fig. 1, 2.—Printed paper charms formed into packets.
" 3.—Amulet-case, with silver amuletic ornament attached.
" 4.—Amuletic ornament of copper.
" 5, 6.—Amuletic ornaments, with ornamental spirals.
" 7.—Amulet against lightning.

[1] *Cf.* "Notes on Sinhalese Magic," p. 185, for unicorn's horn used in like manner, and Waddell's *Lhasa* for the suggestion that this antelope was [because of its profile] the "unicorn" of Huc.

[2] I think it possible that there is some connection between this lizard and the supposedly powerful dragon; in the Far East I have seen lizards, advertised for sale for medicines, called "young dragons."

Tibetan amulets—*continued*:—

Fig. 8.—Armlet of twisted metals, against strains.
„ 9.—Ring containing elephant hairs.
„ 10.—Amulet of plaited cords.
„ 11, 12.—Amulets of tigers' whiskers.
„ 13.—Piece of tiger's jaw.
„ 14.—Monkey's paw.
„ 15.—Thumb-ring of ivory.
„ 16.—Earring with piece of chank-shell.

Nepalese amulets.

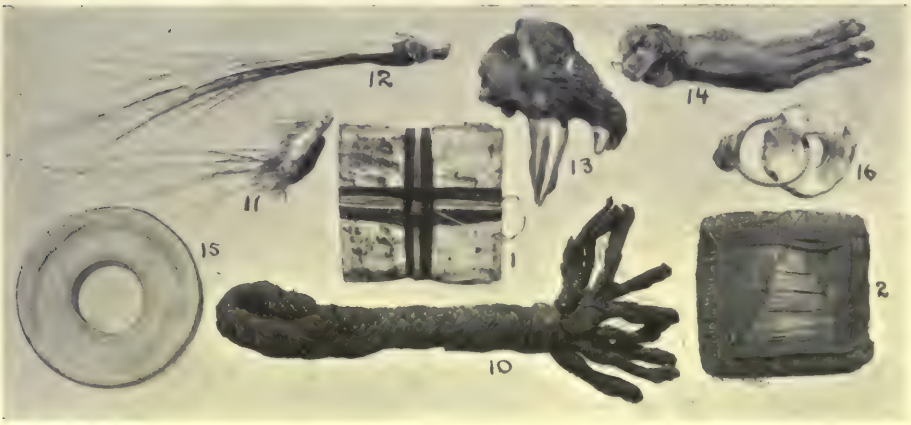
Fig. 17.—Child's amulet.
„ 18.—Glass amulet mounted in brass.
„ 19.—Amulet with claw and teeth.
„ 20.—Amulet with claws.

PLATE XXXVII.—Tibetan printed charms.

Fig. 1.—A charm for a person travelling.
„ 2, 3.—Charms for persons travelling, to keep off all sickness and to bring good fortune and whatever be desired. When the bearer reaches a river the charm should be shown to the devils of the vicinity, and waved about in the air in order to cause them to depart.
„ 4.—A charm to be placed within a house, in order that the inmates may become "great like an elephant." (*Note the elephant at the centre.*)

PLATE XXXVIII.—Tibetan printed charms.

„ 1.—A charm against the malignant spirits of the dead.
„ 2.—A charm said to be used by Lāmas to drive hailstorms away. The charm is to be shown in the four quarters, and waved about, and charmed seeds are to be scattered from a necromancer's horn. (The specimen from which this has been reproduced bears two prints of the picture.)
„ 3.—A charm for placing upon a door to keep out the devils causing sicknesses.
„ 4.—A charm said to be for placing upon the northern door of a house to keep out a demon of the north.





TIBETAN AMULETS, ETC.

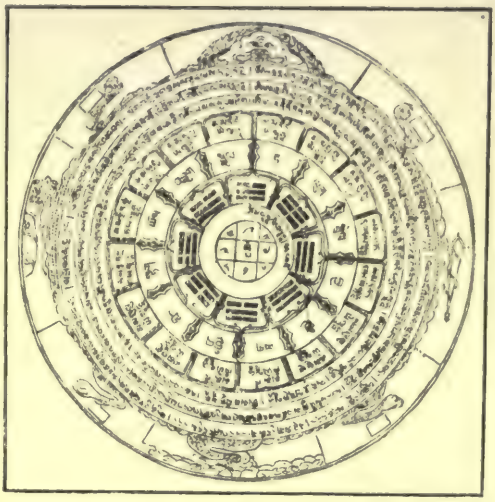


NEPALESE AMULETS.

NOTES ON SOME TIBETAN AND BHUTIA AMULETS.



1



2



3



4

TIBETAN PRINTED PAPER CHARMS.

(*Reproductions of the originals on reduced scales.*)

NOTES ON SOME TIBETAN AND BHUTIA AMULETS.



1



2



3



4

TIBETAN PRINTED PAPER CHARMS.

(*Reproductions of the originals on reduced scales.*)

NOTES ON SOME TIBETAN AND BHUTIA AMULETS.

NOTES ON SOME BURMESE AMULETS AND MAGICAL OBJECTS.

By W. L. Hildburgh, M.A., Ph.D.

[With Plate XXXIX.]

The following notes are based on material collected in Burma in 1907, and refer almost entirely to beliefs of, and things used by, the Burmese. While many of the objects referred to are employed more or less commonly, with the same intentions, by the other races (such as Shans, Kachins, or Chins) inhabiting other parts of the country, since insufficient data regarding such employment were obtained in connection with the specimens, reference will seldom be made concerning it excepting in the few instances where things were said to be used especially by these other races, and not by the Burmese themselves.

The material was collected at Rangoon, at Mandalay and at Bhamo and some of the other towns along the Upper Irrawaddy. The localities given in connection with the various objects are merely those in which I happened to see or to obtain specimens, and should not be considered as in any way limiting the distribution of such objects. My facilities for obtaining specimens and information were much greater at Rangoon and Mandalay than elsewhere in Burma, partly because of the greater amount of time at my disposal in those cities, but principally because of the far greater number of dealers in, and users of, amulets and the like with whom I was able to get into touch there; for these reasons most of my material will be found to have come from either one or the other of those places.

In the cities, many of the amuletic objects are usually to be obtained at the stalls or booths connected with the great pagodas, such as the Shwé Dagon at Rangoon or the Arakan Pagoda at Mandalay, to which must come all the pilgrims to those cities, and at which, in the intervals of attention to their souls, they consult astrologers or physicians, provide themselves with natural or magical protections against, or cures for, the attacks of misfortune or disease, and often buy their cloth, their lacquered ware, their images, their tools, or whatsoever else their city of pilgrimage is a depôt for. The sellers of medicinal substances at these places are of either sex, and they keep, in addition to the ordinary animal and vegetable ingredients of Eastern medicines, frequently some protective or curative charms, and, occasionally, magically treated medicines or amulets. At the municipal bazaars, also, magical objects are sometimes to be obtained, but these are likely to be of a more commercial character—jewellery, substances used merely incidentally with protective or curative intent, or amulets imported from other countries either for the use of the Burmese or for that of the natives of those other countries. Sometimes, also, amulets of the cheapest kinds are kept, amongst their slender

stocks of miscellaneous or second-hand goods, by the itinerant merchants, who take up positions on the ground in the open spaces connected with the bazaars.

The statements as to the purposes for which the various objects are to be used, and the other information concerning them, are as given me, in most cases, by persons who themselves used similar objects for the purposes mentioned, and are generally more or less familiar to the Burmese. There are, however, a number of specimens concerning which I was able to get information only from the sellers of them, by whom I was sometimes told that they believed the things to be used in the manner stated, but that they could not be certain, since their position was merely that of dispensers in accordance with the recommendations of more learned persons. The ignorance, real or feigned, of the actual users of amulets (*i.e.*, the persons upon whom they were seen in use, or the parents of such persons) with reference to their amulets was noticeable, as is so frequently the case elsewhere, and comparatively few details were obtained from such persons. Sometimes, indeed, parents would appear to know nothing whatever of the substance or form of their child's protection, although they might state its intended purpose. It should be noted, regarding the intended purposes of the various specimens, that these are reported in the forms in which they were received, and that a number of these forms must be considered as being in some degree interchangeable and to be read with latitude—thus, "against devils," "against sickness," "to keep from dying," "to keep from being frightened," are all more or less related to beliefs in malignant spirits, although the form which the actions feared may take varies according to the experiences of the giver of the information.

ANIMAL PRODUCTS.

Parts of the elephant, as in other Buddhist countries where they are available, are highly valued as protections.[1] As in Tibet and the neighbouring states, and in Ceylon, so in Burma the hairs from the elephant's tail are often used for the making of finger-rings. But in Burma these hairs, instead of being mounted in metal, are so woven together as themselves to form the rings. Such rings are worn by women during the months of pregnancy, as a protection against the attacks of devils, and are used especially by women whose other children have died, in order that the new-comer may not share the same fate. These rings are called *simii* (probably from *hsin*, elephant), and their virtue was said to be due entirely to the hairs of which they are made. I was told also that single hairs, not formed into rings, are sometimes carried with the same intention, and as being equally efficacious. Imitations of the elephant-hair rings, resembling their originals very closely, are made of palm-leaf, and are, I believe, more common than the genuine rings. They are very much cheaper than the genuine rings, and although I have been told that they are worn merely as ornaments and not as "medicine," I think it reasonable to assume that in many, if not in most, cases their wearers rely upon their close

[1] *Cf.* "Notes on Sinhalese Magic," *Journ. Roy. Anthrop. Inst.*, vol. xxxviii, p. 197, and "Notes on some Tibetan and Bhutia Amulets, etc.," *Journ. Roy. Anthrop. Inst., supra*, p. 386 ff.

resemblance to their originals to deceive the malignant spirits. On Plate XXXIX, several rings of these kinds are shown. Fig. 1 shows a genuine ring, as sometimes sold, with the ends of the hairs projecting in order that the purchaser may satisfy herself of the authenticity of the material used; these projecting ends are generally removed when the ring is to be worn. Fig. 3 shows an imitation ring. Fig. 2 shows a very small ring of elephant-hair, for placing upon the finger or for suspending from the neck of a newly-born infant, in order that it may not die. These rings are much favoured by the Shans as well as by the Burmese.

Elephant-nail is another material favoured, for the making of charms, by both Burmese and Shans. Charms of elephant-nail are worn by young children, generally less than four or five years of age, suspended for the most part from the neck, as a protection from sicknesses. In Figs. 4 to 8 inclusive, are shown some charms carved from elephant-nail; the forms of all the various specimens that I noted were said to be merely ornamental and without amuletic significance. Even the figure of the elephant was said to produce no protective effect; I was told this also concerning an amuletic figure of an elephant carved from a certain kind of wood, and concerning the figure of an elephant upon a golden ornament worn by a child on the Upper Irrawaddy. Finger-rings cut from elephant-nail, of various designs, are also worn by children.

Ivory is used for the making of certain magical figures (see "Charmed Objects") and seems to be believed in as enhancing considerably their efficacy. Part of an elephant's tooth ground in water and drunk is, I was told, a cure for the retention of urine.

Tigers supply, as in other Asiatic countries,[1] various amulets and remedies. A tiger's tooth, if rubbed upon a dog bite, will cure it and will prevent all ills arising from it, or powder made from a tiger's bone may be applied to a bite for the same purpose. A tiger's tooth is sometimes carried by a child as a protection from sicknesses. The tiger's clavicle, a small bone found in the muscles of its shoulder, is to be worn by a child "in order that it may keep healthy and grow big" [Bhamo].[2] The two specimens, shown in Fig. 9, were for sale, tied together as in the illustration, but were said to be for use singly. The knee-cap of a tiger, I was told at Bhamo, is sometimes carried as an amulet, sometimes rubbed in water to form a lotion. Tiger's skin, powdered, is used as a medicine.

The claws of animals are used as protective amulets for children, but, apparently, rarely by the Burmese. A bear's claw and a panther's claw, each mounted in silver as a pendant, which I obtained at Bhamo, were said to be Shan, and to be not used by the Burmese. Similar statements were made concerning certain animals' teeth, obtained at Rangoon. A tusk-like canine tooth of a musk-deer,

[1] *Cf.* "Notes on Sinhalese Magic," pp. 197, 198, and "Notes on some Tibetan . . . Amulets, etc.," p. 392. For notes on the antipathy between the tiger and the dog see also *Malay Magic*; the belief enters also into Japanese protective folk-lore.

[2] I have been told that in Assam this bone is carried in order to secure good luck for its bearer. I have seen specimens, from what locality I could not tell, mounted in silver as pendants.

mounted in silver, obtained at Bhamo, was not recognised as an amulet by any of the Burmese to whom it was shown, although some of them said that the skull of the same animal was used as a Burmese medicine; the specimen is probably Shan.

The knee-cap of a bison (?) is used for rubbing with water upon the arm to cure pains in that member. [Bhamo.]

Scales of the scaly manis are commonly worn by children, hung from the neck, as a protection from sicknesses and from frights (probably mostly those indicated by the sudden starting of the child while asleep). A skin of the same animal is sometimes hung up within a house to keep the inmates from illness. Fig. 10 shows one of the scales attached to a red cord, as frequently worn. It is worth noting, in view of the protective or curative virtues assigned to the colour red in many parts of the world, that, although the cords used for the suspension of a child's amulets or neck-ornaments in Burma are much more frequently red (or reddish) than any other colour, I was always told, in answer to my many inquiries concerning it, that no special protective virtue is assigned to red, and that it is favoured merely because of its decorative effect.

Red coral is worn by Burmese children as a protection against sicknesses. The beads and necklaces of that material, which I saw exposed for sale, seemed to be of European manufacture, and included a quantity of fragments of small branches, pierced and strung together, such as are prepared at Naples. Some beads formed of a red composition (apparently of European manufacture), sold as coral (although at a much lower price than that of the genuine substance) and supposed to be coral, were credited with the same virtues as genuine coral. In addition to its protective action the coral is believed to change in colour, in sympathy with the health of its wearer, *darkening* in illness. I judge the belief in the *darkening* of the coral is the general belief, because I was told of it at Bhamo, and again, by several Burmese, at Rangoon.[1] A school-boy, attending a school under European (Roman Catholic) direction, told me that a number of his school-fellows wore coral at the neck, as a protection, and that it *paled* when the wearer became ill; since this is the general European form of the belief I judge, from the circumstances, that it may be a present and local introduction at Rangoon.

A fragment of the spine-like tail of a king-crab, worn suspended from the neck, is believed to keep a child from sickness. This substance is more used, however, for protecting cattle from illnesses, pieces of it being buried with that intention in the soil of the field in which the cattle graze. As a cure for sickness in cattle it may be ground in water which is to be drunk by the animals; or the main part of the shell may be used in like manner.

Certain small shells are hung from an infant's neck in order to cure it of a sore mouth which prevents it from suckling properly, and also to cure it of the running of saliva from its mouth. This slavering appears, from what I was told

[1] It is curious if this is actually the case, since I have seen several references to Indian beliefs in the *paling* of coral, and since the natural sympathetic action would be a paling.

by several Burmese, to be believed to cause the child to become sick, or to presage a coming illness, wherefore the Burmese endeavour to prevent it by the use of amulets such as these, or those of amber or other materials (see below).

A cowry shell may be hung up in the cage of a singing or talking bird as a protection, in order that the bird may not, by means of sorcery (? envy or the evil eye), be prevented from using its voice. Cowry shells are sometimes put upon the heads of buffaloes, but only as ornaments, I was told, not as amulets. Cowry shells, burnt and mixed with lime, form a powder for application for the cure of skin diseases.

Vegetable Products.

A part of the costume commonly worn by the Kachin women who come into Bhamo is formed of a considerable number of rings, resembling rings of wire, which are worn loosely on the legs just below the knee. These rings, which are formed of a black-lacquered vegetable substance, are credited with the property of protecting their wearers from weariness and from jungle sicknesses, and are, in consequence, worn commonly by the people of the district, including Burmese, Kachins, Shans and Shan-Chinese, when they have occasion to go upon the jungle-covered hills there. The larger rings of similar material, worn round the waist by the Kachin women are, I was told by several informants, merely ornamental, and are not considered to be protective. (Compare below, threads worn on legs by coolies.)

The seed-pod of *Helicteres isora*[1] (Fig. 11) which resembles a number of short cords twisted together is used, because of its appearance, against stomach pains (which make the patient feel as though his bowels were being twisted together), being either worn, wrapped in a cloth, upon the abdomen, or taken internally mixed with water [Bhamo].

The seed-capsule of the *Martynia* (Fig. 12), which resembles the upper part of a snake's skull, including the fangs, because of this resemblance is used against poisonous vermin. It may be worn at the neck, by a child, as a protection against snakes, or it may be used, rubbed in water, as a lotion for the cure of a snake bite or scorpion's sting [Bhamo]. It is worth noting that the *Martynia* is not indigenous, but is a weed introduced from tropical America.

Finger-rings cut from coconut shell are worn by women as a protection against evil, and (according to one informant) especially during pregnancy. Small rings of the same kind, apparently either for children or for suspension by a cord, are also obtainable [Mandalay].

At Rangoon a small figure of an elephant (Fig. 13), carved from Thingan wood (*Hopea odorata*) and formerly covered with gold-leaf, was obtained from a

[1] My specimen is one used by Burmese; at the Pitt Rivers Museum is one, used against snake-bite, from the Shan States. In the same collection is a seed-pod of *Helicteres isora*, for use against colic, from India.

medicine-seller. This image was credited with the ability to protect its bearer from devils, by virtue of its substance and not, it was said, because of its form.

MINERAL PRODUCTS.

Ornaments of amber are commonly worn by small children, it being believed that the amber has a protective effect, and also that it keeps the child from slavering (see note on shells, above). The amber is found in Burma, and is worked into numerous forms, some of them protective, others apparently merely decorative, most of which forms, seem, however, not to be repeated in other materials. Concerning the protective efficacy of the various forms, the opinions of the people (Burmese) questioned differed; in the following list are given the forms more or less commonly obtainable at Mandalay at the time of my visit, with the opinions of my informants regarding them :—

Frog.—(Figs. 14 and 15.) Apparently the most common form; said to be protective.

Dog.—Quite common; by some persons said to be protective.

Lion.—(Fig. 16.) Fairly common; by some persons said to be protective. (Compare below, Fig. 25.)

Fish.—(Figs. 17 and 18.) A common form; by some persons said to be protective, by others to be merely ornamental. The resemblance of the amber fish shown in Fig. 18 to the common Italian amulet representing a flaming heart is worthy of note, and is suggestive of some possible connection between that Italian amulet and the still more common Italian fish-shaped amulets. Concerning a small silver fish purchased in the bazaar at Mandalay, I was told by some persons that it was an amulet, but by more others that it was merely an ornament.[1]

Indefinite animals.—Rat (?), hare (?), humped cow (?); no special information obtained. (A figure of a humped cow, composed of charmed medicines, is described below.)

Gong.—(Fig. 19). Said to be protective.

Key.—By some persons said to be protective, by others to be merely ornamental.

Gun.—No information obtained.

The wearing of silver, of gold, or of jewellery seems sometimes to be considered protective in itself, and is,[2] I think, sometimes prescribed for a child; in default of precious metals, base metals may be used. A pair of necklets worn by a child of

[1] "Tradition says that in one of his former existences Gaudama was shipwrecked, but brought to land by a large fish, which he afterwards fed during its life." J. Anderson, *Mandalay to Momien*, Lond., 1876, p. 259.

[2] *Cf.* "Notes on Sinhalese Magic," p. 152. See also below, pp. 406 and 407. Lumps of gold are sometimes worn under the skin to secure invulnerability (*Mandalay to Momien*, p. 409).

very poor parents, as preventive of slavering, appears to illustrate this. One of the necklets is formed of a red cord carrying three Chinese "cash," which latter were explained as being used instead of other coins more valuable than the parents could afford; the other necklet consists of three bits of silver—a defaced four-anna piece, a bit of rolled sheet, and a bit of folded sheet—on a red cord.

A convex disc of gold, often plain, sometimes with a figure in *repoussé* upon it, hung by a string from the neck, is a common ornament of a Burmese child, and is often the only piece of jewellery worn. Brass ornaments, similar in shape, but generally coarser in workmanship, are also worn. On the golden discs I have seen the figure of a Burmese lion, a peacock, or an elephant; on the brass discs I have seen only the two former figures. These discs, I was told in each instance I inquired concerning them, are merely for ornament, and are not worn as protections.

Miscellaneous Amulets.

Strings of small gold circular pieces, rings with bars across them, are worn by children attached to their ankles or their wrists or (according to some persons) at the neck, in order that such children may grow up to be strong and healthy. In Fig. 20 there are shown five such pieces, all alike, upon a red cord; on another string that I saw at Mandalay the pieces were of two forms (one having four curved pieces, instead of three, within each ring, the other having two horizontal bars running across each ring, with two vertical bars between these bars and a third between the centre of the upper bar and the circumference). I was told that the pieces represented fetters, but I did not ascertain for whom (*i.e.*, whether for the child, on the plan of the well-known Chinese lock-shaped amulets, or for malignant spirits). The number of the pieces to be used in each case appears not to be fixed by rule, but to be limited only by the taste or purse of the child's parents.

A series of four necklets that I obtained from a child who was wearing them, at Bhamo, consists of: (A) and (B), two cords, each carrying a small sachet said to contain medicines to prevent mucus running from the child's nose; (C), a red cord carrying a triangular ornament of elephant-nail and four small rolls of metal (probably without inscriptions), worn against sickness; and (D) a red cord carrying three wooden objects said to be for keeping the child from crying, and a piece of black substance to keep the child from sickness. The mother of the child appeared to know nothing concerning the forms or materials of the pieces on (D); I was told by a man acquainted with amulets that the wooden objects probably represented a linen-beater, a pounder, and a wooden cow-bell, and that their virtue probably lay entirely in their substance.

Coolies sometimes wear a pair of cords, one round each leg just below the knee, against weariness and "to keep the blood from mounting to the upper part of the body" through over-exertion.

Charmed threads, as in India and Ceylon, are worn at the neck or wrist as a protection against devils. Ordinary white threads having been brought by the

applicant, together with flowers and water, to a Buddhist priest, the latter recites certain verses over them.

AMULETS TO SECURE AFFECTION.

The following objects (with one exception) from Rangoon are for the purpose of gaining the affections of persons of the opposite sex or of causing a person to be liked and favoured by all those with whom he may come into contact.[1] Love-charms, I was told, are believed to exercise their powers more strongly at night than during the day, for which reason the night is considered to be the better time for testing their efficacy and value. It will be seen that sandalwood is the material, or an ingredient, of almost all the amulets described. It is probable that in some, if not in all cases, the objects have been subjected to special charming ceremonies.

A figure, about $\frac{11}{16}$ inch high, of a seated man (or Nat ?), carved from sandalwood and covered with gold-leaf. To be placed under the pillow at night "to cause a lady to come in a dream" (the meaning here was not quite clear), and to be carried thereafter to cause every woman to like the person bearing it.

A statuette, about $\frac{1}{2}$ inch high (Fig. 21) of two figures kneeling in coition, apparently made of sandalwood or of a mixture containing sandalwood, and covered in part with gold-leaf. To be carried concealed in her hair by a woman desirous of attracting her husband's love again, etc., or to be carried by a man in order to attract a woman's love; its effect was said to be exerted only upon the one person whose love is desired. Several other specimens, identical in form with this, were noted. (Mandalay.)

A statuette, about $\frac{15}{16}$ inch high (Fig. 22), of two figures standing in coition, carved from sandalwood. To be carried on the person in order to gain the love of the opposite sex.

A small lump of a dark mixture containing, amongst other ingredients, sandalwood. To be rubbed in oil which is then to be put upon the forehead, in order to cause any girl, in front of whom the person thus treated may stand, to fall in love with him. When not being used this substance should be kept carefully bottled up.

A figure, about $\frac{5}{8}$ inch high, of a man (or a Nat ?) seated, carved from sandalwood. To be carried, in order to cause everyone to like its bearer.

A figure, about $\frac{7}{8}$ inch high (Fig. 23), of a man standing in prayer, carved from sandalwood. To be carried, to cause everyone to respect its bearer.

Small figures of Burmese priests, of about the same sizes as the statuette just described, or slightly larger, carved from sandalwood or ivory, are carried as charms to cause all persons to like their bearers; they are believed also to bring good-luck. An ivory figure of a priest, in the possession of a man from whom I bought various

[1] *Cf.* "Notes on Sinhalese Magic," pp. 157 *et seq.*

amulets, was said to be much more powerful as a charm than similar figures of sandalwood, and its price was, correspondingly, very much higher.

A figure about ½ inch high (Fig. 24) apparently representing a man seated in prayer, said to be carved from the bone of a man's wrist. To be carried as a very powerful charm to cause every one with whom he comes into contact to like its bearer.

A figure, about $\frac{11}{16}$ inch high (Fig. 25), of a leogryph, formed of a perfumed substance and covered with gold-leaf. To be carried by a person born on a Tuesday, in order that enemies may be conciliated, etc.

Charmed Medicines and Medicinal Objects.

There are obtainable at Rangoon, from some of the charm-vendors, curative objects and substances whose efficacy is considered to be due to, or to have been greatly enhanced by, magical processes to which they have been subjected. Some of the medicinal substances have been shaped into curious figures which, presumably, are intended to add to their power. The quantity of material used for the formation of these figures is, in general, so large in comparison with that required for the treatment of a patient as to indicate that in most cases the figure is intended for the physician or pharmacist to use as a source of supply, and that it is not intended for sale, as a whole, to a patient.

The following objects are intended to be used remedially, but without themselves being destroyed in the curative processes :—

Thin sheets of silver, inscribed with magical formulæ, which frequently are rolled up in the form of a tube. These sheets are to be worn, strung on cords, as amulets, or are to be put into water which is then taken as a potion. The specimen shown in Fig. 26 is a cord bearing four rolled inscribed sheets, and is to be worn upon the right wrist as a protection against, and a cure for, fever; other specimens for the same purpose had, respectively, two sheets and one sheet. The plates for use in water are sometimes put on cords, sometimes not.

Flattish blocks, an inch (or a little more) square, of a hard substance, appearing as though they had been cut from the sides of a large globular clay vessel, which are inscribed with squares containing characters on each face, are used, like the silver sheets, to impart medicinal qualities to water. The specimen shown in Fig. 27 has a square of sixteen compartments on each face, and is believed to cause water in which it is placed to become curative of "a hard stomach." Other specimens, kept by the same vendor, had squares of four compartments only on each face.

The statuette shown in Fig. 28, and representing, I was told, a humped cow, is composed of medicines and covered with black varnish. It is to be put into water, which is then to be drunk as a cure for the effects of sorcery.

The statuette shown in Fig. 29 represents a Beloo[1] riding upon a horse, and is

[1] "A kind of monster which eats human flesh and possesses certain superhuman powers." Judson's *Burmese-English Dict.*, Rangoon, 1893.

composed of medicines and covered with gold-leaf. It is to be placed in a house, or carried (although rather large), to keep devils away.

The following objects, composed of medicines and covered with, or showing traces of, black varnish, are to be taken internally, scrapings of, or fragments from, them being drunk in water:—

The specimen shown in Fig. 30 is for the cure of "devils inside of a man," or the effects of sorcery. A beehive-shaped object (not shown) about 1¼ inches high and 1½ inches diameter at the base, with its surface divided horizontally into five sections, is for the same purposes.

An obelisk-shaped specimen, 2¼ inches high, composed of medicines differing from those of the preceding two specimens, is to be used for the same purpose. Another, of similar form, is for use against snake-bite.

The two specimens shown in Figs. 31 and 32 are for drinking in water, to keep devils away. One is a figure of a man, holding what appears to be a club horizontally over his right shoulder. The other is a figure of a person kneeling in prayer; in the illustration there may be seen, in the centre of the base, a small hole, apparently made in order that portions of medicine may be scraped away for use, while there is a similar hole in the top of the figure's head.

The following objects, of the same nature as those which have been described just above, formed part of the stock of an old man, who seemed to have the highest reputation amongst the medicine-sellers about the Shwé Dagon, and who dealt only in charmed objects and not in ordinary medicaments. I wished to buy some of his things, which differed from those of the other vendors, but the prices, which ranged from ten to fifty rupees apiece, were so high as to be prohibitive. The explanation of these high prices lies in the time he claimed to have needed for the preparation and charming of the objects (seven years were said to have been spent over one of them), and in the difficulty that he would have had in replacing them for prescribing. Should these objects be taken to a latrine, or other dirty place, they are in imminent risk of losing their virtues, and they must in no circumstances be brought into a house where a dead body lies, or to where there are "bad" (menstruating?) women.[1] Many of the objects kept by this man were covered, in whole or in part, with gold-leaf, in order to increase their efficacy.[2] The explanations are as given by the owner of the objects.

An inscribed thin sheet of silver, rolled on a cord. To be worn, to cause all persons to like its bearer. When not in use it should be preserved in a bottle with some sandalwood.

A small image of a certain Nat, made of sandalwood. To cause all persons to like its bearer. This amulet was unfinished; it lacked its covering of gold-leaf and required the performance of ceremonies taking about ten or fifteen minutes.

An image of a Nat, formed of medicines, which had required several years for its preparation. This amulet may be carried as a means of winning the affection of

[1] *Cf.* "Notes on Sinhalese Magic," p. 151.
[2] *Ibid.*, p. 152.



BURMESE AMULETS, ETC.



BURMESE CHARMED MEDICINES, ETC.

NOTES ON SOME BURMESE AMULETS.

those with whom its bearer comes into contact, but it is intended principally for supplying scrapings, to be drunk in water or coconut-water, to compel the love of persons, or to help towards success in a business undertaking.

A gilded cone composed of medicines. To be rubbed into water which is to be sprinkled upon a person for the cure of the effects of sorcery.

A small cone, ungilded, composed of medicines. To be used in tatuing, to bring upon the subject the favour of all the Nats; or to be scraped and drunk in coconut-water, for the same purpose, for seven days or for fourteen days in succession, after which its use may, in most cases, be discontinued.

Description of Plates.

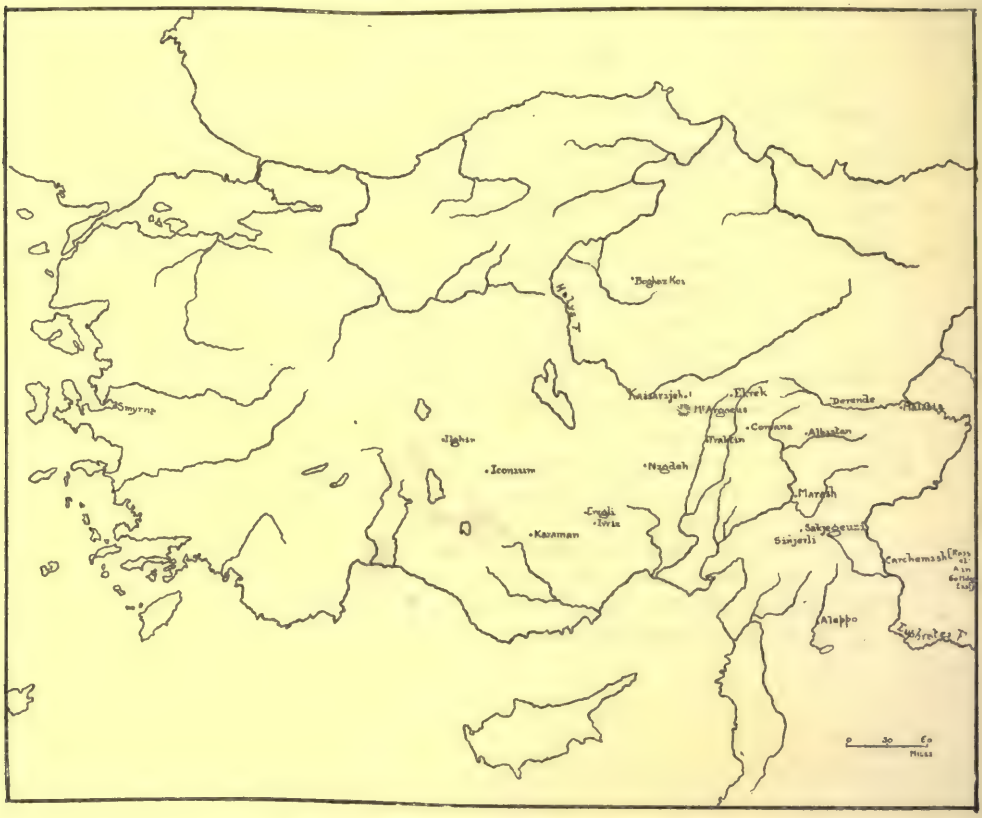
Plate XXXIX. Burmese Amulets, etc. (*Dimensions given in text.*)

Figs. 1, 2.—Finger-rings of elephant-hair.
Fig. 3.—Finger-ring of imitation elephant-hair.
Figs. 4, 5, 6, 7, 8.—Amulets carved from elephant-nail.
Fig. 9.—Tigers' bones used as amulets.
„ 10.—Scale of scaly manis, on cord.
„ 11.—Seed-pod of *Helicteres isora*, against stomach pains.
„ 12.—*Martynia* seed-capsule, against snakes, etc.
„ 13.—Charm of Thingan wood.
Figs. 14, 15, 16, 17, 18, 19.—Amber amulets: two frogs, a lion, two fish, a gong.
Fig. 20.—String of amuletic gold ornaments.
Figs. 21, 22.—Love-charms.
Fig. 23.—Sandal figure, to secure respect.
„ 24.—Figure of human bone.
„ 25.—Leogryph of perfumed substance.
„ 26.—Inscribed silver sheets, against fever.
„ 27.—Medicinal amulet.
Figs. 28, 29.—Amuletic objects formed of charmed substances.
„ 30, 31, 32.—Charmed medicines in the form of figures.

RECENT HITTITE RESEARCH.[1]

By D. G. Hogarth, M.A., F.S.A.

It is unnecessary at this stage to review in detail the earlier history of the Hittite problem—that problem which was set before scholars in the latter part of the nineteenth century by the discovery of the part played in the foreign relations of Egypt and Assyria by a west Asiatic people called the Kheta or Khatti, coupled with the further discovery of a class of monuments in a peculiar art and script, which were claimed for the work of that people. It came to be generally agreed



MAP OF ASIA MINOR SHOWING SITES.

that it was identical with the race known to the Israelites as the Hittites, and that its civilization had filled an important, though long-forgotten, place in ancient history, intermediate between east and west.

The monuments in question were observed first in Northern Syria, but later were found to be at least equally numerous in Eastern Asia Minor, and even to occur sporadically on the western part of the Anatolian plateau almost as far as

[1] Read at the Winnipeg Meeting of the British Association, 1909.

the Ægean coast. Stray examples which were excavated at Nineveh and Babylon were reasonably put down as foreign objects, spoils of war, gifts or commercial importations.

The tendency of scholars at the outset was to regard the Hittite race and its civilization as primarily Syrian. This view was owed partly to the geographical situation of the earliest discovered monuments, partly to the Hebrew, Egyptian and Assyrian records, whose references to Hittites, so far as they were then understood, seemed all to refer to a people domiciled in Northern Syria. So long as this view held the field, the people in question was considered of small account compared with the well-known ancient imperial peoples of the Nilotic and Mesopotamian valleys. Syria has always been a land of relatively small groups, living without close political unity in a restricted area. To have been even the most considerable of these groups at a certain epoch was not to bulk very largely in ancient history. As time went on, however, and the known range of the monuments was extended to Asia Minor, our estimate of the importance of the Hittite civilization, if not of the Hittite race, began to grow, and some scholars, notably Sayce, spoke roundly of a "Hittite Empire." Presently also the same scholar, with the agreement of Ramsay, Perrot and others, expressed a belief, based on observation of both the art and the script, that Cappadocia rather than Syria was the original home of the "Hittite" civilization: and that it was only at a later time, contemporary with the eighteenth and nineteenth Egyptian dynasties that it became domiciled south of the Taurus. From study of the Egyptian records others, *e.g.*, Dr. W. Max Müller, reached a similar conclusion.

We need not now follow the ups and downs of the controversy which ensued, nor raise again the objections taken: for the issue has been practically decided in Sayce's favour by certain discoveries made in Cappadocia three years ago. These have set the whole Hittite problem in a much clearer light, and must be the starting point of our present review.

The site of a remarkable prehistoric city was discovered in 1834, at Boghaz Koi, in North-western Cappadocia, by Texier and Hamilton, independently, but almost simultaneously. Its remains covered a large area of rocky ground, the centre, and apparently acropolis, of the city being an eminence known as Buyuk Kaleh. Here were obvious remains of strong fortifications and of a large and massive building, either a palace or a temple. But what attracted most attention to this site was a series of rock-reliefs on the walls of a hypæthral recess in a hill-side a short distance away, and these soon became famous as the prehistoric sculptures of Yasili Kaia. About thirty years later the Emperor Napoleon III. promoted an expedition for the better exploration of Galatia and Cappadocia, and the result was the publication of these reliefs, of a plan of the site at Boghaz Koi, and of reproductions of a rock inscription and of objects lying on the surface, in the *Exploration en Galatie*, etc., of MM. Perrot and Guillaume. But at that time the "Hittite" art and script were still unrecognized; and it was not till 1878 that it was observed by Sayce that the style of the Yasili Kaia reliefs and

the pictographs which accompany certain figures in them, were identical with the "Hamathite" or Hittite. No excavation was carried out on the site till 1890, when E. Chantre went to the spot, did some superficial digging, and established the very interesting fact that the site yielded clay tablets inscribed in the cuneiform character. Cappadocia had for some time been known to produce such tablets, the distributing centre of which was Kaisariyeh. Their original sources remained, however, for awhile a mystery, and cuneiform scholars, unable to read some of them, suspected forgery. But when Chantre not only found similar tablets on the site of Boghaz Koi and in the hands of peasants living near, but also traced some Kaisariyeh specimens to a mound lying three hours to the east and known as Kara Huyuk, and others to other sites, *e.g.*, Huyuk, north-east of Boghaz Koi, the existence of a genuine Cappadocian class of cuneiform records was placed beyond doubt. He obtained also certain bronzes, which illustrated a prehistoric Cappadocian art ; and subsequent explorers of the region, mostly British students, began to observe the fragments of pottery which lay on the surface of Cappadocian mounds, and to discover that there had been also a very remarkable ceramic fabric, in the most distinctive variety of which a thick creamy slip was used to carry geometric and other decoration in more than one colour. Their observations were synthesized and discussed by J. L. Myres in the *Journal of the Anthropological Institute* for 1903, vol. xxxiii, pp. 367–400.

By this time much curiosity had been aroused concerning prehistoric Cappadocia, and especially Boghaz Koi, which was patently the most important of its early sites. More than one proposal was made to the Ottoman Government for leave to excavate the place and a German application finally carried the day. In 1906, Dr. Hugo Winckler, the well-known cuneiform scholar, proceeded thither to make a preliminary survey, and in this and a subsequent visit collected a number of fragmentary cuneiform tablets from the site of the city. Some of these proved to be in an unknown language, but others were in Babylonian and could be read at once. A startling revelation ensued. One of the fragments contained part of a document, whose tenour was identical with that of the famous treaty made by Rameses II with Khetasar, King of the Hittites, about 1280 B.C., and inscribed on a wall at Karnak. The names of the Kheta kings mentioned at Karnak appeared also on the Boghaz Koi tablet under variant but readily recognizable forms. *Khetasar*, who made the treaty, was *Hattusil:* his predecessor, *Mutnara*, was *Mutallu:* the next in ascent, *Maurasar* or *Marsar*, was *Mursil;* and finally *Sapalulu* or *Sapararu*, who had treated with Seti I., was written *Subbiluliuma.*

This discovery was enough to prove that the city at Boghaz Koi had formed part of the Kheta confederacy against Rameses, and that it was itself so far Hittite that it worshipped Teshup, the god already known for chief deity of the Hatti. But that this city was itself the city of Hattusil and head and centre of the confederacy was not clear till other tablets had been read, most of which were found when regular excavation was undertaken in 1907. These included documents referring to all these four kings, and notably records amounting to

chronicles of the two most important reigns, those of Subbiluliuma and Hattusil II, together with letters written to other courts and to vassals. Three more kings were added to the list, from an earlier *Hattusil*, predecessor of Subbiluliuma, to *Aruanta*, second in succession from Hattusil II.

It was now beyond question that the tablets are disturbed remains of royal archives, and hardly less certain, when their various character but common reference to one dynasty were considered, that these archives were those of the kings of Boghaz Koi from the fifteenth to the twelfth centuries B.C. Scholars found themselves face to face with the fact that the capital of the Kheta or Hatti folk, before the Assyrian records begin to speak of them at Carchemish, in Syria, lay in North-western Cappadocia, and that the early seat of Hittite civilization was there.

The documents, which have so far been read, have taught us also much more. They have enhanced enormously our estimate of early Hatti power, and placed it on a par with that of the better known empires which were its contemporaries. We see Subbiluliuma, son of a client of Babylon, asserting imperial independence and conquering the power of Mitani, which we know from the Amarna archives to have been the chief north Mesopotamian state in the earlier part of the sixteenth century. He reduces to vassalage the Amurri, also well known, from other records, as the Bedawi lords of the Mesopotamian and Syrian deserts.

When he had thus extended his suzerainty we find him writing to the son of Katashman-Turgu, King of Babylon, not as a vassal but as an equal, and urging him to take action against a common enemy, conjectured by Winckler with great probability to have been the rising North Semitic power of Assyria. Dominance over Mitani, suzerainty often rebelled against, but always reasserted over the Amurri, and command of Syria down to Carchemish, Aleppo, and even farther south, are still evinced in the correspondence of Hattusil II, who, as we know from Egyptian records, held even Kadesh in the Aramæan region near the head waters of the Orontes, and over four hundred miles from Boghaz Koi.

If Hatti dominion extended from Cappadocia thus far into Syria in the thirteenth century B.C., it is hardly necessary any longer to boggle at the probability of its having embraced at that period the greater part of the peninsula in which it first arose. The occurrence of "Hittite" figures carved in the rock near Smyrna (in the Kara Bel pass and on Mt. Sipylus) ceases to be an inexplicable puzzle; Sayce's much-derided contentions that Lydia, before the Mermnad dynasty, was a "Hittite satrapy," and that it derived its Mesopotamian names and affinities through a Cappadocian intermediary, pass now into the domain of reasonable inference; and the observations of Ramsay, Perrot and others that the earlier Phrygian monuments display strong Cappadocian characteristics find their justification and their explanation. Even if Winckler's discoveries had never been made, the cumulative results of other recent research in Asia Minor would have established the fact that Hatti civilization was at home in Cappadocia, and radiated thence over the whole central plateau. Ten years ago the Hittite monuments discovered south

and west of the Halys were scarcely above half a score in all, and this small group was so widely spaced that it was not unreasonably supposed to be the memorial of some one moment of alien conquest or passage. But the number of such monuments has been so notably increased of late and their distribution has become so much more close and general, that Hatti sites and monuments can no longer be regarded as accidents outside Northern Cappadocia. In Southern Cappadocia, for example, *i.e.*, Cappadocia south of the elbow of the Halys, about a dozen monuments and several sites have been added by superficial exploration alone, without any help from the spade. These include two monuments, a colossal eagle and a foursided inscribed *stela*, from the banks of the middle Halys itself: an incised rock inscription from Mt. Argæus; another from the valley of the Zamanti Su to the south of this mountain and not far from Fraktin, where also the site of an early settlement has been discovered. Furthermore we have an inscribed lion from Comana with an uninscribed fellow: a second rock-relief at Ivriz: an uncertain number of rock inscriptions from the valley of the Tokhma Su near Derendeh, found, but not yet published, by the Cornell Expedition, and some sculptured stones apparently discovered near Malatia and photographed, but not yet seen by an Oriental scholar. With the monuments previously known in the Albistan, Eregli, Nigdeh, Ekrek and Nevshcher districts, the new examples leave little unoccupied ground in Southern Cappadocia: and this result, be it said again, has come about without search having yet been made below the surface of the soil.

Nor was the same civilization less at home apparently in Southern Phrygia or Lycaonia. To the stray Hittite monuments previously known in the Iconium and Ilghin districts, Sir William Ramsay has now added a group of relief inscriptions at Emir Ghazi, and he and Miss Gertrude Bell have found a sanctuary with the outlined figure of a god and incised inscriptions on the Kara Dagh not far from Karaman. As Hittite monuments have long been known to occur in the Sangarius basin also, we are left with the certainty that Hatti civilization once pervaded the whole Anatolian plateau. Mr. H. R. Hall, in an interesting article recently published in the *Journal of Hellenic Studies*, does not go too far in calling the Hatti the "type-people of Asia Minor," and in saying that those conceptions, usages, and the like, which we have long recognized in ancient life as "Anatolian," must in future be regarded as, in origin, Hittite. His article is a sign that scholars are prepared to submit the early Greek myths and legends to fresh examination in the light of the newly accepted facts about Hatti domination in the *hinterland* of Greek Asia. It may be added that the art, as well as the ethnology, of early Greece calls for similar re-examination after these discoveries.

An unfortunate illness has interrupted Dr. Winckler's work at Boghaz Koi since 1907, but it is much to be hoped that the Berlin societies interested in that excavation will not allow it to stand over *sine die*. The report issued in December, 1907, which contained the fullest account of the tablets yet published, did not contain proof that the archæological documents of the site in the strict sense of the term had been sought for, observed, and studied as seriously as the historical

documents. Yet where are we to learn Hatti archæology, if not at Boghaz Koi? There alone have been found written documents precisely dated wherewith we may hope to classify the unwritten. We want to know the exact relation in which these lie to pottery, buildings and all other remains of Hatti culture. If Boghaz Koi be not dug out to the bottom according to the best rules for the excavation of stratified sites, Winckler's brilliant discoveries on the surface will lose more than half their value.

We may hope, too, for more cuneiform archives, and particularly for the correspondence of successors of Hattusil II. Two very interesting points in the later foreign relations of this Cappadocian monarchy remain obscure. On the one hand what happened to the Hatti monarchy in Asia Minor after Hattusil II? On the other, what happened to the Hatti immigrants into Syria? The first question probably depends for its answer on our ability to answer the second. The whole record of the Syrian Hittites bristles with difficulties at present. The Amarna correspondence, which speaks of the Kheta as a danger only to the northern borders of Syria, agrees with what we should naturally infer from the records of Subbiluliuma, namely, that in the latter's reign and not before, the Hatti came south in force, and established overlordship in Northern Mesopotamia and Northern Syria. Yet there are references in other records to peoples of that name having appeared even farther south a good deal earlier. For example, there is the well known mention of "children of Heth," at Hebron in the history of Abraham; and a fragmentary chronicle of the First Babylonian Dynasty states that "Hatti" invaded southern Mesopotamia about 1800 B.C. A ready and possibly right way out of the difficulty is to suppose that the Cappadocian Hatti were not the only "Hittites," but were part, if ultimately the most important part, of a race widely distributed over Western Asia at a much earlier epoch. This seems to be the view of Winckler himself, for he clearly states his belief that the Mitani were in the mass ethnically kin to the Hatti, worshipping the same supreme god, Teshup. Nor is he disturbed in this belief by what is perhaps the most startling of the revelations made by the Boghaz Koi tablets, namely, that the royal house of Mitani, in the time of Hatti domination, invoked gods who have familiar Aryan names, Indra, Mithra, Varuna, and the Açvin Twins; for he finds evidence that this royal house was alien and derived from *Harri*, which he thinks was not Harran, as might be guessed at first sight, but Mt. Hor in the south.

If Winckler be right in this ethnical identification of Mitani and Hatti, we may suppose that the latter name was used by scribes of the Mesopotamian monarchies without precise reference to the Cappadocian people, and thus we may explain another difficulty, namely, that in the Assyrian records, from the time of Tiglath Pileser I onwards, "Hatti-Land" does not seem to mean Cappadocia at all, but only North Syria. It is noticeable also in these records that, though all North Syria seems to be generally called *Hatti-land*, and names of places in Commagene (*e.g.*, Pitrû) are quoted as Hatti names, there is more mention of the *Kummukh* as a *people* then, than of the Hittites. At any rate we must infer that the Kummukh were

still a people with a recognized distinct existence, although it remains highly probable that they, like the Mitani, had been included under Hatti dominion, and perhaps were ethnically kin to the Hatti.

This difficulty, however, is not great if it be remembered that the Assyrian records all refer to a later age than the Egyptian or the Cappadocian records of the Hatti. It is reasonable to suppose that the period of Hatti conquest was long past, and that small groups, formerly subject, had reasserted independence—a familiar result of most oriental imperial conquests. These considerations raise under a new form an old question—whether, after Winckler's discoveries, we are any more justified than before, in regarding the Hittite monuments of Syria as altogether, or at all, the work of the same authors as those of Asia Minor. There can be no doubt that they represent one and the same civilization, and that during a long period there prevailed a uniform art which used identical subjects and means of expression, together with a uniform script which expressed languages very closely akin, from the Black Sea (and almost from the Ægean Sea) to mid-Syria. But that all the Syrian monuments are memorials of the Cappadocian Hatti is even less probable than that all the Anatolian monuments were the work of Syrian Hittites. It is much more likely that we shall ultimately be able to distinguish in the general Hittite class, Mitani, Kummukh, and other sub-groups. To the former (or to an Amurri group) one would naturally refer the rude sculptures of undoubtedly "Hittite" character accompanied by cuneiform legends, which Max Freiherr von Oppenheim discovered in 1902 in the large mounds of Tell Halaf near Ras el-Ain in mid-Mesopotamia, but published only in 1908. To a Kummukh group belong perhaps the "Hittite" remains excavated at Sinjerli a dozen years ago by Dr. von Luschan and others, and those now in process of examination at Sakjegeuzi, by Professor J. Garstang. On both these large and important North Syrian sites the very interesting Hittite sculptures, so far found, are of a provincial style, and, up to the present, Hittite inscriptions are wholly wanting. One must not lay too much stress on the last fact; neither site has been yet examined at all exhaustively, and at Sakjegeuzi, in particular, only one out of five mounds has been probed; but enough has been done even there to raise a suspicion that, as at Sinjerli, the art remains are all of comparatively late period and derived style, and that the distinctive pottery and perhaps even the distinctive script of the Cappadocian Hatti were not in local use.

At the same time not only have monuments in that script been found in Syria round about the habitat of the Kummukh, for instance at Marash and Samosata on the north, at Hamath and Aleppo on the south, and along the Euphrates on the east; but so also has art of a higher order in the last indicated district. The sculptures and inscriptions of Jerablûs, which was almost certainly Carchemish, and also those recently found at Tell Ahmar, a few miles lower down the Euphrates, but on the Mesopotamian bank, are as finely executed as the best rock sculptures of Cappadocia, and even more advanced in style. Did these spring from the fountain head of the civilization, even if those of inner Syria did not? Are they the work of the Cappadocian Hatti themselves, who settled after their southward

venture at Carchemish and made it a southern capital? It may be so, but also, it may not. Carchemish is mentioned in the Boghaz Koi records of Dudhalia, successor of Hattusil II, as having even then a king of its own. The fine execution and style of the Euphratean Hittite sculptures finds an explanation in their most markedly Assyrian character. Equally with those of Sinjerli and Sakjegeuzi they may have been the work of a subject people and been inspired by a derived art; and they probably owed their superiority to proximity to Nineveh, and relations with the great Mesopotamian trade routes towards the west.

The presumption therefore at present is rather against than for the Syrian groups of Hittite monuments being all the work of the Cappadocian Hatti, and against their affording good evidence of a permanent occupation of Syria by the latter. One must bear in mind what the relation of Oriental conquest to Oriental empire has usually been. The result of the former has seldom been more than acknowledgment of suzerainty by peoples and kings, who were left to subsist in other respects as they subsisted before. Because Subbiluliuma and Hattusil conquered Mitani or came south to Kadesh, it does not follow in the least that Mitani or Kadesh were occupied by the Cappadocians in permanence; nor does it follow that the Khatti of the Assyrian records were the actual Cappadocian people of that name. But it does appear that, either as a result of those invasions or more probably owing to close ethnic relations and affinities from early times, Cappadocian civilization occupied North Syria more permanently than did the Cappadocians.

If there is no reason to suppose that the Syrian conquests of Subbiluliuma and Hattusil resulted in any change of the centre of Cappadocian power, there is no more reason to imagine that there was any decline of the Hatti in Anatolia after Hattusil's time. It is fairly certain that Phrygia had long been subject to them, and likely that it continued to be so for some centuries. There is no warrant in Greek literature (for example, none in Homer) for dating the rise of an independent Phrygian dynasty before about 1000 B.C., and it is probable that none arose before that associated with the names Gordius and Midas, which seems to have been due to a new racial element coming in from the north-west. The inscriptions in "Phrygian" characters found by Chantre at Huyuk north-east of Boghaz Koi, and one in the same character, but less certainly in the Phrygian language, found recently at Tyana, may indicate that when this dynasty was established, it reversed the old relation to Cappadocia, and in the day of the latter's weakness became its overlord. About Lydia it is less safe to surmise. If at the acme of Cappadocian power it too had been a Hatti satrapy, it is probable that it was so only in the loosest Oriental sense, *i.e.*, it did no more than acknowledge Cappadocian suzerainty and pay tribute. There is some reason for thinking that at a later time, when the Phrygian dynasty was flourishing, Lydia accepted a similar relation to Phrygia; and it can hardly be a mere coincidence that the violent death of the last Midas synchronized so nearly with the full establishment of the Mermnad dynasty.

ANTHROPOLOGICAL NOTES ON THE BANGALA OF THE UPPER CONGO RIVER.

(Part II.)[1]

By The Rev. John H. Weeks.

XXIII. Writing.

When first we went to live among the Bangala there were no methods of writing in existence. When a message of any importance was sent, the sender would give the messenger a piece of plantain leaf having the mid-rib of the leaf about 6 inches long, and four flaps or wings to it—two on each side thus :—



This the messenger would carry and deliver with the message.[2] With less important messages, tokens were sent such as the sender's knife, or pipe, or spear, etc.; these of course were returned by the messenger. If a woman was sent with a message, and was given a spear as a token, she would not hold it in the ordinary way by the haft, as no woman was allowed to carry or handle a spear, but would tie a string to the spear and drag it after her. Ordinary messages were sent without any tokens.

A token was given by a debtor to a creditor on contraction of a debt. It might be a piece of old iron, or a bit of broken saucepan, or anything else to hand that would not rot or burn, or be destroyed by white ants, etc. The token would be of no intrinsic value, but would be given in the presence of witnesses, and would be held by the creditor until the debt was paid. If the debtor died without paying, the creditor would take the token to the heir, witnesses would be called and on the heir acknowledging the debt the man would again hold the token until redeemed. In the event of the creditor dying he would have told his heir of the tokens, against whom they were held and the amounts due on each. It would be among the first duties of an heir to have these tokens properly acknowledged as soon after the death of the first holder of them as possible. Very often the only wealth a man has to pass on are these tokens representing money owed to him,

[1] For Part I, see *supra*, p. 97.

[2] The Mundenge plantain leaf token generally sent by a woman to someone by whom she wishes to be bought, the acceptance of it is a promise to buy or marry her. Ndanga is the word used for an ordinary token sent with a message or given on contraction of a debt. Bolonga = token in recognition of relationship. This token is generally a slave and 1,000 brass rods, or some valuable article, given to a brother in recognition of his rights over the giver's wife, who is the sister of the receiver of Bolonga, and her only guardian.

consequently it is necessary to have them properly and frequently ratified before witnesses.

Knots were often used in counting and keeping accounts, and also notches cut in sticks. Sometimes a piece of twine was knotted and preserved, and sometimes only the fringe of the cloth. Notches were sometimes cut on a small stick and sometimes on the post of the house. The months that one worked would be cut on a stick, but a notch would be made on a house post for every elephant and hippopotamus killed. Very often they would put a secret mark of ownership on an article, but this was generally a simple notch in a certain place known only to the owner. A certain toe would be cut off a fowl's foot, or certain feathers cut to denote ownership. I have even seen all the toes cut off for this purpose. What are often taken to be charms and fetishes in a native's farm are simply signs to mark off the boundary of one farm from another.

XXIV. Astronomy.

Among the Bangala, living as they do so near the equator (1° 30′ north), there are no seasons, not even a dry or rainy season. As the river rises and falls with fair regularity they have names to denote the time of flood twice a year, May and November—which was called *eyo ya mpela*=season of high water. They have the word for moon *sanja* and also *yeli*. The word *butu* was used for sun and also for day, sunshine and light. They had no idea of the movements of the sun, moon and stars.

They had names for different times during the night and day as follows: 2 a.m. *nsusu ya bifo*=the lying fowl; 3 a.m. *nkuku-mpembe ya bifo*=the lying bird. These two were thus named because they falsely heralded the dawn which was not due until later. 4 a.m. *nsusu ya bona bo*=the first fowl. 4 to 5 a.m. *butu bobeti*=the sun is near. 5 a.m. *mikela mia butu*. 5.30 to 6 a.m. *lunzanza* or *njumo*=the dawn. 6 a.m. *butu boye*=the sun is come. 6.15 to 7 a.m. *ntete*. 12 noon, *njanga*. 2 to 3 p.m. *njanga bomuna*. 3 to 4 p.m. *mwekwa*. 6 p.m. *ekingele nsusu*=when the fowls go in, or *butu bwingeli*=the sun enters, or *butu bwindi*=the sun darkens. 6.30 p.m. *yoiyoi*=twilight finishes. 11 to 12 p.m. *mobanje mwawi*=one set of ribs or one side of a person, meaning that a person turns from lying on one side over on to the other. 12 midnight, *nkabo ibale*=second division or second half, or *ejeketani*. As indefinite terms there were *butu*=day; *ntongo*=morning; *njanga bomuna*=afternoon, and *eloli*=evening; night=*mokolo* and *butu*.

Stars.—Large star was *moti;* bright star *motondolo;* the morning star *mokwete* and *yombi*; Venus *mwali wa sanja*=wife of the moon; shooting star *yanji*, this same word is also used for a newly made or fetish fire; a cluster of stars (Pleiades) *lingondo nsamba*=crowd of young women; the milky way, *njela ya mpela na elanga*=the road of floods and drought. Both on the lower and upper river the natives connect the "milky way" with the abundance and scarcity of rains; they say that when the "milky way" is bright, clear and well seen that there will be plenty of

rain. Set of five stars thus ⁘ in the constellation Lepus, *kole*. They say these form a man (see under Agriculture). Three stars forming head and arms of *kole* are called *limpununga mbuma ya bonsombo*. Three bright stars on Orion's belt *nkai iatu* = three paddlers. Star, general name *mwajekolo*, plural *bajekolo*. There is a name for evening star *mosolampande*. Five stars together in Orion *liboke ja nkake* = bundle of thunder or lightning.

While at Monsembe there was one total eclipse of the moon, but they had no name for such a phenomenon, and regarded it with little or no interest when I pointed it out to them.

There is a legend that the moon was once a python and made a road for itself on the earth. Some adventurous hunters trapped it, but on noticing that there was no more moonlight they let it go, whereupon it sprang into the sky and never again returned to the earth. When there is no moon some say that the python has gone on a long journey, and others say that it dies every month. There is much shouting and gesticulation on the appearance of a new moon. Those who have enjoyed good health ask that it may be continued; and those who have been sick ascribe their complaint to the coming of the new moon, and ask it to take away their bad health and give them good health in its place.

Here, as on the Lower Congo, many believe that the sun returns from the west to the east during the night to be ready to rise in the morning. An eclipse is caused by the sun or moon hiding itself. They thought that the stars were a species of large fireflies that formerly existed on the earth, but have now gone into space; and shooting stars, and comets are signs that a great chief has died.

XXV. Arithmetic.

The numerals from 1 to 5 are declinable. The letter in brackets is the particle that changes according to the class of the noun used, *e.g.*, two persons would be *batu* (*ba*) *bale* = persons two, but two cloths would be *bilamba* (*bi*) *bale* = cloths two.

The numerals are:—1 (*y*) *awi*; 2 (*i*) *bale*; 3 (*i*) *atu*; 4 (*i*) *ne*; 5 (*i*) *tanu*; (6) *motoba*; (7) *nsambu*; (8) *mwambi*; (9) *libwa*; (10) *jumu* or *mokangu mwawi* = one tying; (11) *jumu na* (*y*) *awi*; (12) *jumu na* (*i*) *bale*; (20) *mikangu mibale*; (21) *mikangu mibale na* (*y*) *awi*; (30) *mikangu miatu*; (40) *mikangu mine*; (50) *mikangu mitanu*; (60) *mikangu motoba*; (70) *mikangu nsambu*; (80) *mikangu mwambi*; (90) *mikangu libwa*; (100) *nkama* or *munkama*; (200) *minkama mibale*; (1,000) *nkutu yawi*; (2,000) *nkutu ibale*; (10,000) *mokoko*; (20,000) *mikoko mibale*.

The meaning of *mikangu mibale* (20) is, two tyings. 10 was very often called *mokangu mwawi* = one tying, from Kanga = to tie. It was the custom of the natives to roll their 15-inch brass rods (the currency) into a series of rings about $1\frac{1}{4}$ inches diameter, and these they would run one on another, like split rings, until there were ten linked together, and they would call that *mokangu mwawi* = one tying = 10.

The ordinal numerals are:—

Motu wa bo = The person who is one, or the first person.
„ „ *babale* = „ „ „ „ two „ „ second person.
„ „ *batatu* = „ „ „ „ three „ „ third „
„ „ *bane* = „ „ „ „ four „ „ fourth „
„ „ *batanu* = „ „ „ „ five „ „ fifth „
„ „ *motoba* = „ „ „ „ six „ „ sixth „
„ „ *mikangu mibale na wawi* = twenty-first person.

To use a word of another class we will take *elamba* = cloth.

Elamba ya bo = the cloth that is one, or the first cloth.
„ „ *bibale* = „ „ „ two „ second cloth.
„ „ *biatu* = „ „ „ three „ third „
„ „ *bine* = „ „ „ four „ fourth „
„ „ *bitanu* = „ „ „ five „ fifth „
„ „ *motoba* = „ „ „ six „ sixth „

Elamba ya mikangu miatu na bibale = the cloth that is thirty and two = the 32nd cloth.

The fingers are constantly used in counting. If a man wants to say thirty-four, he would say, *mikangu* (tyings) and hold up three fingers for those to whom he was speaking to say, *miatu* (three) *na* = and, hold four fingers for them to say (*i*) *ne* (four). The letter in brackets would change according to noun understood. By this means, they ensure their hearers following and understanding them.



The way in which they use their fingers is somewhat irregular, and for the sake of clearness I draw two hands and number the fingers 1 to 10—1 to 5 left hand, and 6 to 10 right hand. 1 and 10 are the thumbs. The right hand is used more than the left.

One is expressed by doubling 6, 7, 8, and putting 10 over them, thus leaving 9, the index finger standing alone.

Two, by doubling down 6 to 7 and putting 10 over them, thus leaving 8 and 9 standing up.

Three, by doubling 9 down, and putting 10 over it, leaving 6, 7, and 8 standing.

Four, by putting 10 at the bottom of the division between 7 and 8, that causes 6 and 7 to come forward a little so the hand is turned about that the two sets of two fingers may be seen.

Five, the whole of the fingers of the right hand are left standing with the palm turned towards the person to whom you are speaking.

Six, by doubling down 2 on the left hand, and putting 1 over it so leaving 3, 4, and 5, standing, and doubling down 9 on the right hand, and putting 10 over it so leaving 6, 7, and 8, standing thus, making two sets of three fingers.

Seven, the same as 4 with the right hand, and doubling down 2 on the left hand and putting 1 over it, thus making a 4 and a 3.

Eight, by working the right hand as under 4, and putting 1 at the bottom of the division between 3 and 4 and twisting the hands about so that the four sets of two fingers are seen.

Nine, by holding up the fingers of the right hand as under 5, and putting 1 between 3 and 4 and twisting the left hand about.

Ten, by holding up all the fingers of the two hands with the palms towards the auditors, and every folding down of the fingers, and re-spreading them means another 10. Second and more frequent way—by holding out the fist of the right hand, and every decided shake of the fist means another ten. Third, by clapping the hands together, and every clap stands for 10. The shake of the fist is the most frequent way.

Eleven, by shaking the right fist, and holding up one finger as described under one.

Twelve, by shaking the right fist, and holding up two fingers as described under two.

The toes are very rarely used in counting. I have only seen them used when counting 20,000, and then the man stretched down and put the fingers of both hands on the toes of both of his feet and said: *mikoko mibale* = 20,000.

For addition and subtraction under 10 they would use their fingers, but for higher numbers they would use palm nuts or any suitable things to hand. This was not because they were incapable of adding and subtracting mentally, but because they were always so suspicious of each other that they wanted an ocular proof that the sum was right, and that neither was getting the better of the other. Later on when they knew their figures and could run over their arithmetical tables they would accept each other's sums, but in making a transaction with an uneducated person they would have to resort to the fingers or the palm-nuts for counting.

They always counted by five and tens, *e.g.*, if a person wanted to make up 26 he would take 3, and then 2 put with the 3, and push that 5 on one side, and then make another 5 in the same way and then put the two fives together making ten, and then make two more fives, and put those together, keeping, however, the tens separate, then another five would be made by the 3 and 2 process, and at last 1 put down. Then the two tens would be counted, and the five, and lastly the one.

XXVI. Currency and Value, Weights and Measures.

Men slaves were sold at 500 to 600 brass rods, worth about 6*s.* 6*d.* per hundred. Women slaves were worth from 2,000 to 2,500 brass rods on account of their farm work, and child-bearing capacity. A free woman taken as wife would cost as much as a slave woman, and many articles besides, as an axe, matchet, blanket, hoe,

knives, looking glass, etc., which would be given as presents to the members of the free woman's family. A goat in 1890 was sold for 60 to 100 rods. Spears and knives were sold at 10 to 200 rods according to size and ornamentation. Brass rods at the time of which I am writing (1890) were 15 inches long and ¼ inch thick, and were well established as the currency—everything having a fixed price in brass rods. An article would be a little more or a little less in price as it was above or below par value, *i.e.*, as it was larger or smaller, better or worse than the normal, standard article. Brass rods cost us about 3*s.* per hundred invoice price, but were worth double by the time we had paid for transport to the Upper Congo. Fines and compensations were stated in brass rods, and were paid in brass rods, or their equivalent in trade goods, fowls, goats, or slaves. For example: if a man had to pay a fine for adultery of 100 brass rods (the usual amount), he would pay say, 15 in rods and some trade goods; the value of each article would be known, so they would not haggle over their prices; but if he brought a spear, a native knife, and a fowl, they would haggle over these to settle their worth—one praising the article to sell it as dearly as possible, the other depreciating it to get it as cheaply as he could.

They have names to denote the position of the sun from sunrise to sunset, and also for various parts of the night (see section under Astronomy).

If you were to ask how far it was from one place to another, they would reply that you would have to sleep so many nights on the journey. Say the journey would occupy four and a half days. They would say, "You will have to sleep four nights on the way, and on the day you arrive you will reach the place at midday." Or if it were three-quarters of a day's journey, they would say: "You start at sunrise, and reach the place by the time the sun is there," pointing to where the sun will be at about 3 p.m. A four hours' journey is stated in the same way: "Start at sunrise and you will reach there when the sun is so high," pointing to where the sun will be at 10 a.m. For shorter distances and times—say half an hour, three-quarters of an hour, one hour, one and a half hours, they use the word *moluka* = a paddling. For instance, half an hour will be "two paddlings," three-quarters of an hour "three paddlings," and so on. It is their custom when travelling in a canoe for one-half the crew to dip their paddles on one side of the canoe, and the other half to dip theirs on the other side. They paddle thus for fifteen to twenty minutes, and then to rest their muscles that have been strained in paddling on one side of the canoe, they all change over to the opposite sides and paddle on that side for fifteen to twenty minutes. I have again and again timed them, and found that they are so regular in their changing that they were never less than fifteen minutes and never more than twenty minutes. They call the time between the changes a paddling (*moluka*), and in dealing with short distances and times they say, "It will be one, two, three, or more paddlings," *i.e.*, a quarter, half, or three-quarters of an hour and so on.

If they desired to describe a shorter time or distance than that shown by the use of the word "a paddling," it was done by saying it was or will be as long as it

takes to go from such a place to such a place or from so and so's house to so and so's house, mentioning two well known places or houses. To measure they used their arms stretched to their utmost extent as equal to a fathom, a half that would be a half fathom, hence they would say a house or a canoe was so many fathoms long. They have no word for a quarter or three-quarters of a fathom, so anything over a half fathom would be said to be *less than a fathom*, and anything under a half-fathom would be said to be *less than half a fathom*. *Loboko*=arm, hence fathom. *Maboko*=arm's fathom. *Loboko Lawi*=one fathom. *Maboko Mabale*=two fathoms.

There were no means of measuring liquids. In speaking about a quantity, say of sugar cane wine, they would hold their hands so as to show the size of the saucepan, jar, or bottle. Then jars of certain shapes and makes had their own special names (*see* under Pottery), and to mention a certain jar by its name was equal to stating the quantity. In dealing out sugar-cane wine a dipper was used, and no matter how large the drinking vessel taken to the carouse might be, only two or three dippers' full were put in each. When selling palm oil, a univalve snail shell was used as a measure, but of course these varied in size. To ask for and expect interest on a loan was very strongly condemned by all; but if a person in difficulty promised 150 rods in return for the loan of 100, nothing was said, as it was not regarded as interest but as a gift for help in difficulty. Of course no one had rods to spare until such a promise was given.

They had no means of weighing. A thing was very light, or light; very heavy, or heavy, or "more than I could lift," or "more than so many men could lift."

XXVII. Trade.

In the old days iron ore was brought up the Lulanga River, smelted at Monsembe and made into spear heads, knives of various shapes, hoes, axes, tools for making canoes, such as gouges, and needles for sewing their cloths. A blacksmith was called *motuli* from the verb *tula*, to do smithing. Canoes, paddles, and stools were made by various men. String, rope, and twine were spun and sold to those who needed them. String fish nets, and string hunting nets were also made and sold. Men generally made their own bamboo fish traps. Some men who were expert builders would build houses for others. Fish was caught, dried, and sold. Hippopotami were hunted and killed, and their flesh, after being well dried, became an article of barter. All the above things were used in commerce between person and person, and town and town, and even between districts.

The women made mats of various sizes and shapes, also saucepans, and jars, and dresses as described in a previous section. The farms belonged to the women, and they would help the men in fishing, in making sugar cane wine, palm oil, and sometimes in the lighter parts of house building.

Slaves worked for their master at anything he set them to do. A wise master would study the aptitudes of his slaves, and allow them to follow their

various inclinations; thus, some would hunt, some go on trading expeditions, others do smithing, etc. The slave gave his master a share of his earnings and profits. All that the slave earned or gained belonged to the master, and some masters would take a larger proportion than others. Female slaves were bought and given to the male slaves of the same master so as to induce them to settle down contentedly in their master's town. The children born of such marriages belonged to the master and were slaves like their parents. The produce from a farm worked by a slave would belong to her for the feeding of her husband and children.

Labour was not regarded as a degradation, and those who were skilful in smithing, canoe making, etc., not only became very wealthy, but were regarded with great respect on account of their skill.

Boys liked to accompany their fathers on fishing and trading expeditions, and girls went with their mothers to the farms as soon as they could walk freely, toy hoes were given to them to play with while on the farm. It was a change to them and as such they enjoyed it. Later on they had to render such assistance as they were able to their parents.

Among the Bangala there were no markets, and no market places. If a person had anything for sale he would walk through the town calling out its name as hawkers do in London. Sometimes a person caught a fish that was tabu to him, and he would hawk it through the town to try and exchange it for another.

In their business transactions credit was frequently given, and for such credit no interest was given or expected. To recover a debt a creditor would first dun the debtor until he was tired, then he would break the pots and saucepans and anything he found outside the debtor's house, and tell him that on a certain day he would call again for the money. If the debtor then failed to pay, the creditor would call a few of his friends together and would lie in ambush near the farms until the wife of the debtor came along, when they would pounce upon her and take her to their town. The woman would be lightly tied and well treated. The debtor would hear of the capture, and, supposing he owed 1,000 brass rods, he would get the money together as soon as possible and take it and 500 extra rods, which he would have to pay his creditor to compensate himself and friends for the trouble of tying up the woman and cost of feeding her. If the debt is for 1,000 rods the creditor may tie up one woman, but if he ties up two he puts himself in the wrong, for the value of one woman covers the debt and expenses. If the debt is for 3,000 or 4,000 rods the creditor may capture two women, and so on, in proportion to the debt. If the debt is not paid the creditor can keep the woman or women as his own wives, if they are free women, or keep them or sell them if they are slave women. If a man has no wives, then a member or members of his family may be tied up on the same principle as shown above. Sometimes a creditor would seize people of the same town as his debtor, but this was rarely done except in cases of hostility between towns.

There was a trade language in use, but when a middle-man was employed the seller paid him a small or large fee according to the amount of business.

XXVIII. Property.

The land surrounding a town belongs to the people who live in the town. Certain landmarks as streams, forests, etc., are agreed upon as boundaries. If there is a town near the boundary the land would reach up to the boundary of the next town, but if the town was some distance from the forest boundary, then the ground between the boundaries would be neutral land in which the folk of both towns could hunt, cut timber, etc., as they pleased. Within the boundary the people of the town were free to make their farms and build their houses where they liked, provided the land was not already occupied by someone else. Priority of occupation is the only title to a piece of land. There is no such thing as unclaimed land. It is either within the boundary and claimed by the town living on it, or it is between the boundaries, and is for the benefit of the near towns as neutral hunting ground, but no one town could sell that land without the consent of other towns which are mutually benefited by it.

If a slave belonging to a man of the town cultivated a piece of land belonging to her master's town she would have full rights over it, and her master would see that those rights were not infringed. Of course she could not sell the ground, but she could sell the farm as a farm and the stuff growing on it, and the person who bought the "stuff" could continue to cultivate that piece of land if she were an inhabitant of the town owning the land, if not, she could let the produce mature there, and when she had removed the said produce, the land would revert again to the town.

Men, women and children could own land that they had cleared for farms; and could own slaves that they had bought or inherited. I have known a case in which a slave owned a slave, and that slave—the slave of another—owned a slave also. When we bought a piece of land in 1890, the price we gave was divided among the headmen in the town according to their importance, and they gave a part of their shares to their followers—members of their family and folk attached to their family other than slaves. The State told us we could take the plot of land we wanted for nothing from the natives, but we recognised the native rights to their land, and thus paid them compensation for relinquishing those rights to us. Afterwards we took out title deeds from the State and satisfied their demands also. If we had not compensated the natives, they would have regarded us as interlopers who had stolen their land, and I think their view would have been the right one.

Slaves could be sold by their owner or by the family owning them. They could also be killed by their owner, and no one would prosecute him for murder. He had simply destroyed his own property. Slaves were, as a rule, treated well, for they could easily run away, and then the owner would lose the money invested

in them. It was to the owner's interest to look properly after them—to house them, to provide wives or husbands, and to maintain their rights as members of the community. I have known a few slaves to run away, but I have known more than a few to be treated like members of the family. The better the slaves were treated the more secure were their masters of their services and value.

The river running by the land belonging to a town was the joint property of the town's folk for fishing purposes. People of other towns were not allowed to fish there. There were, however, large tracks of neutral water where all could fish as they pleased, provided no one else was fishing there.

The first-fruit of game and fish that a lad killed would be given to the lad's mother, or, if she were dead, to his mother's sister or the next of kin. The first-fruit of a farm was given in the same way by a girl to her mother, or her aunt.

For the manner in which debts were recovered, see previous section, No. XXVII.

When a debtor dies, his heir—*i.e.*, his eldest son—has to take over his debts and any other obligation. He would take over the debts owed to his father, as well as those owed by his father. The heir who took the estate of the deceased would have to pay his debts, even if they amounted to more than the estate was worth.

Money was lent and borrowed among friends and relatives and no interest charged. Of strangers 50 per cent. to 100 per cent. was often demanded. They had a system of pawning their children. A man in difficulties took a son and pawned him to a headman for some 500 or 600 brass rods. The headman lending the money would hold the pledge until he was redeemed by payment of the sum lent, and a stipulated amount in addition. Such a pledge had to be fed, etc., by the man lending the money, and he might not sell him like a slave since he could be redeemed any day. Such pawns are regarded as free men, and are never treated as slaves. They give their services to the man who holds them in pawn, and fight for him. Such pawns never run away, as the whole of their family connections are in the neighbourhood.

The palm trees, and the *nsfau* (*canuarensis*) wherever found are never without owners. The proprietary rights in these trees are by inheritance, or by planting them, and the rights in them are handed on from father to son in the proper line of heirship. When we bought the land at Monsembe we bought the trees on it, but not the houses, as they were removable.

Slaves could only hold property by permission of the master, and if the latter required help at any time he could take his slave's goods, but a wise master would refrain from doing this without first talking the matter over with his slave, and promising to repay him at some future time. A wise slave would readily give or lend his personal property to his master.

XXIX. Inheritance.

The eldest son takes the title of his father, and also inherits a larger proportion of the property than his brothers. The amount taken would depend on the number of sons. If there were five sons then the eldest would take two-fifths, the second son one-fifth, and the other three sons the remaining two-fifths equally shared; if there were three sons the eldest would take a half, the second son two-thirds of the remaining half, and the last son the rest. The property of a woman would go to her husband, and failing him to her sons. The sons by a free woman would take priority over those by a slave wife.

Sons inherit their father's widows, and in sharing them out, it would be arranged for a son not to have his own mother as a part of his share. Widows do not inherit any part of the estate of their deceased husbands as they themselves form a part of that estate. The son, on inheriting his father's widows, can either keep them as his wives, or if they are slave women he can sell them as slaves, and if they are free women he can arrange for them to marry someone else and keep the marriage money paid for them by their new husbands.

Failing direct male heirs the sister takes the estate, but would give the wives to some of her near of kin, such as male cousins, etc., but should there be no direct male and female heirs, the family clan would take the estate and divide it among themselves. A person with no family would soon become a slave, as a single individual without family could not stand alone. Some charge would be brought against him and being without family be would not be able to defend himself, and he would either be reduced to ordinary slavery or would have to attach himself to some other family and his estate would be taken by them.

There is no adoption into a family, and no "blood brother" can inherit, but a slave who has been long in the family, and has behaved faithfully to the interests of the deceased, would be set free, and would receive a portion out of the deceased's estate.

When there are male heirs and the estate is divided up, the sister (or sisters) takes as her portion the woman or women who were paid as her marriage portion by her husband and this woman or women she gives to her brother, by the same mother, as his wives, so that that brother gets his share of the estate as a son, and also the marriage portion of one or two women (if still alive) given for his sister. In recognition of this the gift brother makes frequent presents of sugar-cane wine and meat to his sister's husband, as this increment to his wealth has come indirectly from him.

Sometimes small amounts were left by will in the following manner:—A token was given in the presence of witnesses, and the article or articles named. The eldest son was then informed of the token, the person to whom it was given and the nature of the goods bequeathed. After the testator's death the token was taken to the eldest son and the property handed over in the presence of witnesses.

The following case was submitted to me for arbitration on September 11th, 1899. The plaintiff said that many years ago his brother was sick, and went to defendant's father's town for medicine. When he was dying the sick man took a long flat pod and struck his "doctor" friend across the ankle. For this the "doctor" demanded from the family of his deceased patient, a slave, three pots of sugar cane wine and two spears, and some brass rods. The plaintiff paid the goods at the time, but now he wished to have them returned on the ground that:—1. No medicine was made and given to his brother; and 2. That since white people had come he could see that it was stupid to follow such customs.

The defendant (son of the above "doctor") acknowledged the debt on behalf of his father who was dead. He admitted that the above statement was correct, and that the above custom was general in this part of the Congo, and was recognized by all. It seemed to be one way of making a codicil to a will, or one way of leaving property to an outsider who legally did not inherit anything, but on account of this technical assault had a legal claim for the above compensation to be paid out of deceased's estate. I told them that I could not interfere with palavers that happened so long ago, but in future when a man was dying and wanted to leave an outsider any of his property he was to call some of his family and tell them to give so and so certain things after his death. Only such a bequest would be recognized. They agreed and went away satisfied.

Chiefs in the Monsembe district were simply headmen, by that I mean heads of families, and only had power and influence commensurate with the size of their family, consequently they received no benefit from the death of anyone except where they inherited in the ordinary way. Uncles and heads of families would act as guardians for minors left with property, and they would have to render a proper account of the amount received when the minor became old enough to look after himself. If a minor inherited a "palaver" from his father, the guardian could not "talk" it, but the matter had to wait over until the minor was old enough to conduct the affair himself. I have known cases to be postponed, for this reason, for fifteen and twenty years.

Guardians could use the women left to their wards as their own wives, and could trade with the goods without paying interest; but when the ward reached his majority he could demand the right number of women from his guardian, and the exact amount of goods left in his charge. If the guardian died in the meantime, his heir would have to take the privileges and obligations of the guardianship, and reserve out of his inherited estate the amount due to his ward.

XXX. Slavery.

Both male and female slaves were bought and sold. They numbered about 25 per cent. of the population. Some were born slaves, others were captured for debt, a few captured in war, and some had sold themselves to pay their debts,

incurred by adultery or by the loss of a lawsuit the expenses of which they could not meet. Some were sold to pay family debts. It was also the custom for the man to give his son in pawn to raise a loan. The status of a pawn was somewhat higher than that of a slave. He might be redeemed at any moment, and thus become again a free person. The one who held him in pawn could not sell him, nor get rid of him to anyone without the consent of the pawner, for the family might arrive with the redemption money at any time, and if the pawn could not be produced the holder would have to pay the pawner three or four times the value of the pawn.

Masters had full power of life and death over their slaves, and I have known one or two cases of masters killing their slaves in anger, but public opinion condemned such masters as fools for destroying their own property.

There were no absolutely independent men and women, apart from chiefs or headmen. All the rest were attached to headmen as relatives, slaves, pawns, or by a voluntary surrender of themselves to a chief. If the family of a free man died off, or became very weak—too weak to defend itself against the aggressiveness of the other families in the town, such a free man would go and attach himself (and any relatives he might have left) to the headman of any one of the stronger families he might select. He then became a member of that family. Their quarrels were his, and his quarrels were theirs. His position was that of a free man owing fealty to the head of his adopted family. He was never treated as a slave. If he had tried to stand alone some quarrel would have been picked with him, and eventually he would have become a slave. A slave was called *mombo*, from *omba*, to buy; a pawn was *ndanga* = token; a free man who attached himself to a chief was called *ejalinya*, perhaps from *jala* = to live at.

A slave boy was not permitted to use camwood powder and oil on his body, but, should he please his master one day by bringing him a present of fish, meat, cloth or brass rods worthy of his acceptance, the master on accepting the offering rubbed his hands over his slave's face and said: "Your skin is very bad. Why do you not rub it with camwood powder and oil?" From that time he is allowed to use that cosmetic so prized by all the natives.

[*Re* the marrying of slaves and the status of their children see previous sections.]

As all that a slave earned belonged to his master, it was theoretically impossible for him to redeem himself. I know one case of a man ransoming himself. He became while a slave a famous witch-doctor and thus grew wealthy; he was allowed, perhaps through fear of his power as a witch-doctor, to amass wealth and to redeem himself, but he had to give fifteen slaves or their equivalent in goods as the price of his own redemption. As a witch-doctor and a wealthy man he was feared and respected, and his children took the position of a free man's children.

As a rule the best dressed men in the town were the slaves, and the worst dressed men the masters. Of course, on special occasions, the masters would wear

plenty of good cloth, and decorate their bodies with powdered camwood and oil. A slave could dress his hair like a free man, but if he had a beard he must leave it loose, and not plait it. Only free men could plait their beards. A master was responsible for the actions of his slaves. I remember a case in 1892 when a slave attempted the life of a headman in his master's town. His attempt failed and he escaped to a very distant town. The master was tied up, killed, and eaten. It is probable that if the master had been a more influential man than he was, some other way would have been found, as the attempt failed. Probably the payment of a very heavy fine would have met the case.

While theoretically a master was responsible for a slave's debts, yet he would repudiate them on the ground that the lender had no right to lend to a slave without first ascertaining whether the master would be responsible for the payment or not.

A slave used to be killed, and his body put in the grave as a pillow for his master's head. Slaves were sometimes killed and sent with messages to the former influential heads of the families.

Slaves would clear the virgin bush and forest land for their master's wives to cultivate as farms. This was not compulsory, but the women would cook extra food, and take more trouble over cooking it for those who thus helped them. The slaves were expected to paddle their master, to accompany him as followers if he went overland to any town, to build his houses, fight for him, and go trading expeditions either with him, or on his behalf. The more wives and slaves a man had the more famous and influential he was in his district. If a slave worked for a white man, the master would expect a large proportion of his pay. Hence a slave would draw as much on account as possible, so that the balance at the end of his contract being small the master would not take so much as he would if he had not drawn on account during the year, or had the whole of his pay to take when he had finished his twelve or twenty-four months. The master had to house his slave, feed him, clothe him, look after him in sickness, protect and help him in trouble, and find a wife for him when old enough to marry. Sometimes one slave wife would be allotted to three or four slaves until such time as the master could buy one for each of them. Their children were slaves and belonged to their master. A slave might be sold at any moment to pay his master's debts, and so be separated from his wife and children, or he might be killed to accompany his deceased master, or to carry a message to his master's ancestor. Except for these two great disabilities, his lot was not hard; he cost too much, and escape was too easy to other masters in distant towns, for ill-treatment to be prudent.

XXXI. Government.

Among the Bangala there were no great paramount chiefs. Each town had its set of families and each family had its head called *mata* who was the eldest son and who as eldest son took the title and the largest share of the estate. *Mata*

might be a man with wives, slaves, and followers numbering 200 or 300 or more, or *mata* might not be able to muster fifteen persons in all, yet as head of his family he would have the same title (*mata*) as the more powerful ones. *Mboka* (a town, village), might consist of twenty or fifty different families living together and numbering 3,000 or 4,000 people, or it might mean only one family or two families not numbering more than twenty or thirty persons all told. It did not matter how large or how small the *Mboka* was, it was independent, self-governing and recognized no overlord. The particular spot where each family lived in the town was also called *Mboka*, so the word had a restricted meaning as well as a wider one. In speaking of the whole cluster of families living at a certain place, Monsembe, Bombilinga, etc., the word *Mboka* was used, but when, in either of the places, one spoke of going to *Mboka* so and so, as in London one speaks of going to Camberwell or Camden Town, or Brixton. Thus there is the head of the family whose word is law to that family and his own section of the town. Then the heads of the families met together to talk over town affairs, and to decide on any course of action. Some were heads of larger families than others, and were richer than others. Such men necessarily had more influence, and their words carried greater weight than the words of poorer and smaller men. Sometimes a man with a loud voice and dominating will would get weaker men to follow him.

In a district there was generally a chief who was appointed by the towns of the district to act as judge in all important matters—at palavers between town and town, and family and family. At the time of his appointment the heads of all the families living in the district who wished to come under his jurisdiction cut down his plantains and banana trees. This action gave him a *casus belli* against all the towns that acknowledged him as judge. By the cutting down of his plantains he became the offended party, and as such had the right of aggressive action against the offenders. Now it was the custom that the offending town must not go to fight the offended town, but must wait for the offended ones to attack them—the offenders. No subsequent quarrel could be taken up until the first was settled. Hence the above chief appointed as judge might enrage a town by his decision, and might call on the other towns to help him enforce his verdict, yet the said town could not attack the chief judge's town because of the old standing palaver of cutting down his plantains and bananas. This ensured the chief judge's immunity from quarrels with people who did not like his decisions, and as there was no fear of such quarrels there was a guarantee of a certain amount of justice and impartiality in the decisions given. He was paid to act as judge by those who needed his services, and this pay refunded his temporary loss from his destroyed plantains and bananas.

There was an unwritten code of laws dealing with most civil and criminal offences, and by these the heads of the families judged each other, and the members of their families.

Stanley in his books on the Congo uses many phrases about Mata Bwiki of Iboko or Diboko (now Nouvelles Anvers) that favour the idea that he was an over-

lord or lord paramount of the district, but that was not so. *Mata Bwiki* simply means Headman Plenty, or Plentifulness. Stanley, I think, gives it as meaning: "Lord of many guns." His name then should have been: *Monanga wa bibau biki* = Lord of guns many. Stanley on his memorable journey happened to land at the landing place belonging to Bwiki's family, and he as the head of the family took the lead in Stanley's receptions. If Stanley had landed half a mile above or half a mile below where he actually did land, he might never have heard of Mata Bwiki.

The word *Monanga* was used in a restricted way as meaning a free born person either male or female. It also was used as a term of respect and meant lord, and frequently was equivalent to Mr., Monsieur, etc. It would be attached to the names of any man to whom and of whom you wished to speak with deference and respect. We were addressed as Monanga, but never as Mata, and many of the more wealthy natives who were not Mata were spoken of as Monanga, and all who were entitled to the *Mata* were also entitled to *Monanga.*

XXXII. Justice and Crimes.

The following incident which I wrote eighteen years ago will illustrate the working of blood revenge:—

December 20th, 1890.—About nine months ago eight brothers lived at Bonjoko—a town three miles below Monsembe. For some reason or other their slaves beat to death the chief of that town with sticks. As slave owners are responsible for the actions of their slaves, the brothers had to fly for their lives. One of the brothers, however, was killed before they fled, and the others came to Monsembe and built a set of houses, and placed a strong palisade round them. They lived thus for nine months in apparent security. The family of the murdered chief did not forget, but waited their time and opportunity.

On Friday last a Monsembe slave fell from a palm tree, and was picked up dead. All Friday night and Saturday the other slaves of the town danced and sang at the funeral festivities of the dead man, and during the noise of their crying and chanting dirges, some Bonjoko people entered the town, rushed into the stockade and killed one of the brothers, cut open the head of another, and chased a third into the bush and there speared him.

If only one brother had been killed the feud would have ended, and reconciliation would have taken place between the two families; but in affairs of this kind they have a credit and debit side, *i.e.*, the chief of Bonjoko was a great man, so it needed two deaths to expiate his. The Bonjoko people had killed one brother before he fled, and they only desired to kill one other brother to square the account, but being divided in their attack into two or three parties, acting independently, neither knew what the other party had done, so two brothers were killed instead of one. Thus the Bonjoko family owes one life to the brothers, who will not rest until they have it, but if in the fray they take two lives, hostilities

will be continued until there is a clear balance sheet. The remnant of the brothers can now move about freely, and do not need any longer to live enclosed in the palisade. It is the turn of the other family to go in fear of their lives.

It has leaked out that the headmen of this town (Monsembe) had little or no sympathy with the brothers, and had in fact received 1,000 brass rods not to oppose the Bonjoko family when they came for vengeance, although they had received presents from the brothers on the promise of protection and the right of asylum in their town.

Later. The brothers have taken the bodies to Bonjoko for burial, and have since gone to live there. They have now made blood brotherhood with the other family, and the old blood feud is finished.

Stolen property found on anyone can be claimed by the owner, and the holder made to pay a fine unless he can prove by witnesses that it was given to him, or he bought it. The giver or seller then is made to pay the fine, and in addition return the money he received of the buyer.

If an article is stolen the owner walks through the town calling out a description of the thing stolen, and invoking on the thief all the fetish curses that come to his mind. These curses are so frightful as to intimidate the thief, and frequently the stolen article is secretly replaced.

If it is farm produce that has been stolen, say some cassava, the robbed woman took a piece of cassava and tied it in the clefted end of a stick, and just below a piece of *euphorbia candelabra* (a powerful charm) was tied. This she carried through the town calling out her loss, and invoking curses on the thief.

If something valuable, such as a piece of cloth, or a large knife or axe is lost, and the owner has a suspicion that a certain man is the thief, he can accuse that man, and if the man denies the theft, his accuser can demand that he should drink the ordeal and so settle the matter definitely. To refuse to drink the ordeal is an admission of guilt. Should the test go against the accused, he will have to replace the stolen article, pay a fine, and all the expenses of the ordeal drinking. But should the test establish his innocence, the accuser will have to compensate the accused and himself pay the fees of those who gave the ordeal. As a rule there are not many accusations brought on mere suspicion, they like to find the stolen property on the thief.

If a slave killed a slave, the owner of the murdered slave could demand two and even three slaves in place of the one killed, and he could kill them all or retain them as his slaves just as he liked. For the murder of a free man the blood of a free man or men must be paid.

Some few years before I went to live at Monsembe, a man, a free man, head of his family, was accused of witchcraft. He agreed to drink the ordeal, but as all the members of his family were away he wished the trial to be postponed until their return. This the accuser would not sanction, and pressed and taunted him so that at last he took the ordeal and died under its effects. The deceased's family returned, and were astonished to learn of the death of their "head." They

threatened the accuser with death as they said their "father" had not had a fair trial, and that he had the right to demand the postponement of the ordeal until their return. It resulted in a big palaver being talked, and the accuser and his family had to pay fifteen slaves to the family of the murdered man. The last of the slaves was paid some eighteen years after the affair occurred.

Drunkenness and madness were no excuse for committing crimes. No one had the right to pardon except the injured person or family. To all known crimes were attached each its own punishment or fine. Adultery was fined from 100 to 300 brass rods—equal from three to nine months' ordinary wages. A thief, besides returning the stolen article, or replacing it, had to pay, as a fine, an amount equal to the value of the article stolen, and the robbed would take a part of the fine, and give the rest to those who helped him to enforce the verdict.

There was no distinction between premeditated and accidental homicide. Life had been taken, and it must be dealt with as murder. The family avenged all cases of assault on any of its members, no matter whether it was physical assault, abduction, rape, adultery, theft, or anything else.

Retaliation in kind, when possible, was the essence of justice among the natives—an eye for an eye, a cut for a cut, a bump for a bump, and a life for a life. When retaliation was impossible, compensation by fines was enforced.

The court was generally held beneath the shade of a spreading wild-fig tree. The headmen who acted as jury sat on the top side of a square; the plaintiff, his witnesses and followers sat on one side; the defendant, his witnesses and followers sat on the opposite side; and the bottom of the square was left open for neutrals, and for those coming and going.

Before the proceedings began the plaintiff and defendant would each take their party of followers on one side, but in different parts of the town, and state tersely their case to them, and then distribute from 200 to 600 brass rods among them according to the importance of the case. It was their duty to clap their hands, and applaud every point made by the one who hired them, and to laugh ironically at the arguments of the other side. These followers would be gathered from any of the men belonging to the neighbouring towns who happened to be drawn together to hear a "big palaver" and pick up a few brass rods. They were in honour bound to applaud their own side, and to remain as long as the case lasted on that day. If the case went into the second and third day, then "refreshers" had to be given to the crowd of followers each day. Some who had urgent business could not attend the second day, but there were others to take their places who were not able to be present during the first day. I have seen 150 to 200 followers on each side, most of whom had no interest in the case beyond the three or four rods they received for shouting on one side or the other. There was a fiction that they were genuinely interested supporters of the side they took, but I have often seen the rods distributed among them, and know for a fact that the majority did not care which side won. They always made sure of their rods before they shouted and clapped.

If a man who had a case was not a good speaker, he could engage an orator (*ntendeko*) to speak on his behalf for a fee of 200 or 300 brass rods a day. Such men were natural orators and it was a pleasure to hear them speak, and see their actions.

When all was ready the parties would take up their positions opposite each other, and the plaintiff would open the proceedings by stating his case, and calling on his witnesses to confirm his statements. The speaker would have in his hand a bunch of palm frond leaves, and as each point was finished he would lay one on the ground in front of him. When he made a telling point against his opponent, his followers would shout, clap their hands, laugh, snap their fingers at each other, and the wits of the party would hurl quips, jokes, gibes and proverbs at the opposite side, and try to look as though it were impossible to lose such a strong case so lucidly stated. These breaks gave the speaker a breathing time in which to collect his thoughts and strength for the next point. So the speaker would go on stating point after point until there would be twelve or fifteen leaves on the ground, all lying in the order of his arguments. Before sitting down he would briefly state the argument that each leaf represented, and it was rarely that a mistake was made in the order, but if there were, those sitting close by would instantly correct it.

If not too late in the day the defendant would state his case, combating his opponents' arguments, call his witnesses, put down his leaves, and rest while his followers indulged in bantering the other side.

Interruptions were frequent, noisy, and often verged on the point of violence. At a biting sarcasm, or a bitter retort, spears and knives would shake (for all were well armed), and more than once I have intervened at a critical moment to stop a general *mêlée*.

The jury of headmen, after the defendant had finished, would withdraw to go over the evidence *pro* and *con* and consider their verdict, and on their return a couple of men with wood-ashes, or powdered camwood on leaves, would sit, one near the plaintiff, and the other near the defendant. The appointed chief would sum up the case, and give the verdict, say, in favour of the defendant, and instantly the man sitting near him would rub, with more vigour than gentleness, the wood-ash or camwood powder over the face of the winner as a sign to all that he was acquitted of the charge brought against him. He would leave the mess on his face for days as a proof, to all and sundry, of his acquittal. The loser would have to refund to the winner all his expenses, pay the jury of chiefs, and be a sadder if not wiser man.

Sometimes after one or two days' hearing the jury has not been able to decide a case satisfactorily, and it has been dismissed, each side bearing its own expenses.

There appeared to be no cross-examination of witnesses, no guarantee of truthfulness, and no punishment for perjury. Each side would start away in the far distant past, and drag in as much irrelevant matter as possible, and fog,

confuse, and entangle the case to the best of their abilities. The ordeal[1] was at times resorted to in order to decide involved cases, and from the results of that there was no appeal.

XXXIII. Organization.

A man before he marries builds a house in which he may live for a long time as a bachelor. His first wife will live with him in that house, and his second, when he can afford to procure her, may live, for a time, in the same house. It is, however, the ambition of every woman to have a house of her own, and it is the invariable practice for a man to build a house for every one of his wives, which she will regard as her own and in which she will live and bring up her family. A man of any pretence to importance will also have a house built exclusively for his own use. To this house he invites the wife he wants for the time being, or sometimes he simply goes to the wife's house for the night.[2] If he does not build a house solely for himself, he makes one of the other houses longer, and has his own private room in it.

If a chief has visitors he allocates one or more houses to them and their followers, and the women living in those houses become for the time being the wives of the visiting chiefs and their people. This may simply mean that they act as servants and cooks for the visitors and their retainers, for as a rule a chief on a visit takes two or three of his favourite wives with him. Still if the visiting chiefs or any of their retinues take the women temporarily as wives they are only accepting fully the proffered hospitality.

A village may have from twenty to five hundred huts in it, and even more. The villagers have sometimes quarrels and fights with sticks, but rarely, if ever, with guns and spears. They live as a rule at peace with each other, and if there is a dispute they try to settle it by "holding a palaver." They combine as a whole against a common foe. The family that causes a fight leads the van in a war, and if only the offended family attacks the offenders, the other families of the offender's town will stand armed ready to defend their families and property, should the offenders be unable to repulse the attack. But if the offended family brings the several families of their town to attack the offenders, then the other headmen and their followers in the town will join to repel the attack, for it is no longer a quarrel between two families of different towns, but a fight between town and town. Thus a family combines to fight a family, and a town combines to fight a town.

The Monsembe people belonged to the Boloki tribe, which tribe included the towns of Mobeka at the mouth of the Mungala river about 120 miles east of

[1] See the *Journal of the Folk Lore Society* for March, 1908, for a description of ordeal drinking at Monsembe.

[2] If a man has several wives he sleeps 1, 2, or 3 nights with each in turn, and this is called *masu*. Should a woman have her period at the time of her *masu*, she loses it, but a healthy woman insists on her *masu*.

Monsembe on the north bank, also the towns in the district of Mangala twenty miles west of Monsembe and also on the north bank. The Boloki tribe had settlements on the south bank at Bolombo twenty-five miles east of Monsembe, at Dibulula a few miles farther east, and at Bokombi a few miles further east still. The chief men at Lulanga—a town, at the mouth of the River Lulanga, situated forty miles below Monsembe on the south bank of the River—claimed kinship with the Boloki; and at some of the towns on the Lulanga River itself I have met men who told me they belonged to the Boloki tribe, especially at Bonginda—formerly a large town twenty-five miles up the Lulanga River. Strange to say the section of Monsembe in which our station was built was called Bonginda, and the town referred to above as being twenty-five miles up the Lulanga River was also Bonginda. Considering the distance there was a great amount of inter-communication between the two places. Between Mobeka and Monsembe, and also between Mangala and Monsembe were many towns belonging to other tribes with whom the Boloki did not consider themselves as akin in any way.

Many of these Boloki folk came from the Libinza lake (already referred to), and others came down the Mangala River, hence the name of their language, Ngala, and the reason for calling the Boloki people, and the Liboko or Iboko people (of Nouvelles Anvers) by the name of Bangala, *i.e.*, *Ba-Ngala*, the people of Ngala, *Mu-Ngala* indicating the place of the Ngala. A good map will show that although the outlet of the Libinza lake and the mouth of the Mungala River are far apart, yet it was possible for emigrants of a large hinterland tribe to come out on the main river at those two places.

The Bomuna tribe occupied the river bank from just below Monsembe to Mangala. They were said to have come from the bush, and in fact their name was often used as a derisive term for "bushman." There were many dialectical differences in their language from that of the Boloki, but through long intercourse we had no difficulty in understanding them.

Juu (plural *Muu*) was the word used for family,[1] and it also means hearth, fire-place, seeming to indicate those who sat round the same fire. *Mboko* = branch of family having the same male ancestors. *Ekanga* = tribe, clan, from *Kanga*, to tie together, probably showing that they were tied together by the bonds of blood. *Ekanga* has two meanings: One narrow which covers only the immediate connections by birth kinship in all its ramifications, and the other which covers all who have the cocks-comb tribal mark.

Birth alone constituted membership of the tribe. A slave who redeemed himself would be tolerated in his attempts to pass himself off as a member of the tribe; he might affect the tribal mark, and plait his beard, etc., and his wealth

[1] At Monsembe in 1890 there were the following families:—Misenge family of Bojombo; 2, Boboki family of Bololi; 3, Bokoka family of Mata Bombo; 4, Bobenjele family of Elemi; 5, Mampoko family of Njaki; 6, Bolombo family of Mata Ma Njoko; 7, Bonjoko family of Ekeba; 8, Bambai family of Munjele.

might cause respect, but being of no family he would have little or no influence.

As shown in a previous part of this section geographical nearness did not produce a feeling of kinship, but blood relations, no matter how far apart they lived, felt the affinity strongly. While a mother's family was visited (if she were a free woman) the children belonged to the father's family. And it is considered a disgrace to be too closely connected with the mother. A free woman when about to be confined would go and stay with her mother during her accouchement, and for some few months afterwards, but this was to have her own family's help at such a time, and also if she died during her confinement her family would have to replace her, consequently they desired to have her among them to see that she was properly treated.

Some of the questions under this head have already been discussed in previous sections.

XXXIV. Kinship.

The native has very hazy ideas about relationship, and scarcely any two will give the same name to the same relative, and moreover, if you take a list of the names of relations from a lad and put it away for six months and then ask the same lad about the same relations in the same order as before with your list before you, he will give you a list that will not tally with your first one in several essential points. I have made many attempts to draw up a complete list, and if I had been satisfied to take one young man and examine him once only I might have procured a list of names for relations that would have been full, but it would have been inaccurate, *i.e.*, it would have been that man's list then, but it would not have been his six or eight months afterwards, and it would not have been anyone else's list even at the time he gave it to me.

The accompanying lists (p. 439) I received about the same time from two different young men of fair intelligence, and after I had written the two lists down, I called the two young men and read them their different names for the same relative. They each argued that what they had given was the right one and the other was wrong. I have found the same difficulty on the Lower Congo. It is impossible to get a list of any real value. My colleagues find it much the same among the other tribes.

The natives of Monsembe are unanimous respecting the terms for mother = *nyango;* father = *ango* and *tata* (*ango* is only used by a son to the one who begot him; *tata* is used by a slave to his master, by a son to his father, and I have heard it used by a mother to her son. It seems to be a term of respect in its wider use); brother = *nkaja*; sister is also *nkaja* (a sister calls her brother *nkaja*, and a brother calls his sister *nkaja*, but if a girl speaks of her younger sister or elder sister she would use the words *mojimi* for younger sister only and *motomolo* for the elder only. The boy would use the same words for younger or elder brother); younger sister or younger brother, *nkaja mojimi*; elder sister or

elder brother *nkaja motomolo* (*nkaja* is never used in speaking of the same sex as the speaker, *i.e.*, by a sister of a sister, or a brother of a brother); wife = *mwali*; husband = *moloi*; child = *mwana*; male child, *mwana lele*, *i.e.*, son; female child, *mwana muntaka*, *i.e.*, daughter; grandparent = *nkoko*; great grandparent = *nkokolele*; great great grandparent = *ndalola*; but a grandchild is also *nkoko*, and so with the great grandchild *nkokolele*, and great great grandchild is *ndalola*. The farther you get away from the above degrees of relationship the more confused the native becomes, and the more contradictory will be his statements. The terms of relationship are used in addressing each other, but personal names are also used without any hesitation. The names of the dead, however, are seldom mentioned, and always avoided if possible.

The first-fruits of fishing, hunting, and farming were always given to the parents or their next of kin if the parents were dead. Special portions called *mobando* and *elelo* (of an animal killed by a man) were given to his relatives and children, and to the headman of his family.

The mother-in-law is the only relative avoided. She and her son-in-law must not look on each other. Directly a man hears the word *bokilo* = mother-in-law, he runs and hides. They can sit at a little distance from each other, with their backs to one another, and talk. The only reason I have been able to ascertain for this avoidance is: "My wife came out of her womb." *Bokilo* is from the verb *kila* = to forbid, prohibit, tabu. *Bokilo* in its wider use is also relation-in-law, *e.g.*, daughter-in-law, brother-in-law, sister-in-law, sisters of mother-in-law, father-in-law, and it was regarded as incest to have sexual intercourse with anyone who was *bokilo*.

I knew a case in which a man married his mother-in-law by marriage. The woman was not his wife's mother, but his wife's father's wife, and as such was his mother-in-law. I had seen him avoid her many times, and it was evident from this that all the wives of the wife's father are regarded as joint mothers of the children, and hence mothers-in-law. The man's wife's father died, and the man wanted to have one of the wives (*i.e.*, one of his mothers-in-law) as his own wife, so he arranged with a friend to pay the marriage money and take her as his wife, then she by that marriage being no longer his mother-in-law, he was able to take her as his own wife. He paid the money for her and took her to his house.

No genealogies are kept, and in two or three generations all ties of near relationship are lost, and, if here and there remembered, are non-effective, except where a man can get a drink of sugar-cane wine, or a feed by recalling kinship.

English.	Words given by Lutoba.	Words given by Intongi.
Mother's brother	*Mojika*	*Mojika and* [1]*Nso mama.*
„ brother's son	*Nso nyango*[2]	No name, but takes name of *Mojika* on his father's death.
„ „ son's son	„ „	Called by personal name until death of his father, and then *Mojika.*
„ „ „ daughter ...	*Nkaja*	No distinctive name.
„ sister	*Mama*	[3]*Mama moti.*
„ sister's son or daughter ...	*Mojimi or nkaja*	No distinctive name.
„ „ son's son	„ „	„ „ „
„ „ „ daughter ...	„ „	„ „ „
Father's sister	*Tamwalimoto*	*Tamwalimoto.*
„ sister's son	*Bola*	[4]*Mwana wa tamwalimoto.*
„ „ daughter	*Nkaja*	„ „ „
„ „ son's son	[5]*Wa mwa nyango*	No distinctive name.
„ „ „ daughter ...	*Nkaja*	„ „ „
„ brother	*Tata*	[6]*Ta mungwende,* or on his father's death he is called *Tata* or *Tata Elenga* [7]
„ brother's son	*Mojimi*	No distinctive name.
„ „ daughter	*Nkaja*	„ „ „
„ „ son's son	*Mojimi*	„ „ „
„ „ „ daughter ...	*Nkaja*	„ „ „
Brother's child	*Mwana*	*Mwana.*
„ child's child	„	„
Grandfather, or mother or child ...	*Nkoko*	*Nkoko.*
Great grandfather	*Nkokolele*	*Nkokolele.*
„ great grandfather	*Ndalola*	*Ndalola.*

NOTES ON THE NAMES IN THE LISTS.

[1] *Nso mama* and [2] *Nso nyango* are practically the same, as the second word in each phrase means mother, and the *Nso* is the collective plural of *Munso* = bowel, intestine, entrail, hence *Nso* = the bowels, intestines; and the idea is: the one who comes from the same womb as my mother. The word *Nso* is only used of maternal relatives.

[3] *Mama moti* = the little mother.

[4] *Mwana wa tamwalimoto* = child of *tamwalimoto.*

[5] *Wa mwa nyango* = of or from the little mother; *mwa* is a sign of the diminutive.

[6] *Ta mungwende* = one who stands in place of another.

[7] *Tata Elenga* = young or boy father.

Mama is not an introduced word. We found it in full use on our arrival, and although it was often used about one's own mother, yet it had the same meaning as applied to female relatives, mistress or mother, that *Tata* has to male relatives, master or father. See above on *Tata* (p. 437).

By "no distinctive name" I mean no term indicative of relationship. They were known by their personal name only.

I may say that the list under Intongi's name, although not so full, is the better of the two, because where there is a term given it is properly descriptive of the relationship, but the words in Lutoba's list, such as *Mojimi* = the younger and *Nkaja* = brother, sister, are so general and more often used of one's own brothers and sisters that they are little or no good as terms of relationship in the wider circle of cousins, nephews, etc.

XXXV. Marriage.

Young girls and even babies are betrothed in marriage and payments made for them before they are old enough to understand and give their consent. On the marriage money being completed the man takes a brass bracelet, and in the presence of witnesses, puts it on the child's arm, and at the same time, says: "This is my wife." When the girl arrives at a suitable age, and sometimes before puberty, she is taken by her parents, together with some sugar-cane wine, to her husband and handed over to him, and on the man giving the parents a present the transaction is completed. Should the child die another is put in its place, and if that is not possible the money is returned. Sometimes a girl objects to being handed over thus, and, if her protests are disregarded, she will run away to a neighbouring town and select her own husband, and her parents will have to make the best bargain they can in the way of marriage money.

If a man in search of a wife sees a young woman he likes he may speak to her, or to her father first, and if they—the girl and her parents—are agreeable, he will call his friends as witnesses and go to the father's house. The girl will then be called out and the man will take a spear and going into the centre of the crowd he will stick the spear in the ground and say: "If the girl likes me let her pull up the spear." Thereupon the girl will step forward, and pulling up the spear will carry it to her father saying: *nakamojinga* = I desire him.

When the time arrives for the marriage the parents will take some plantain, cassava, fish, and various other kinds of food, and a calabash of sugar-cane wine, and together with the girl will go to the house of the husband, and hand over the girl by putting her hand in the man's hand in the presence of some witnesses. These latter drink the wine and the ceremony is completed, and consummation of the marriage takes place that night. The food and the wine are a proof that the girl is not sold as a slave, but is married as a free woman.

When a girl has pulled up the spear, the man has to pay the "bespoke" money—a hoe, an axe, a blanket, a looking glass, a matchet, and a few other odds and ends—to the head of the girl's family. The girl is then reserved for him until such time as he can pay the whole or larger part of the marriage money—equal to about £10, which is about the cost of two male and two female slaves. In the meantime he can give small presents to the girl, and she will cook and send him an occasional dish of food, and often there is sexual intercourse before marriage, for the young man regards the girl, and speaks of her, as his wife.

A free man marrying a free woman would have to give her father and family two male and two female slaves, and no money or goods would be taken in lieu of them; but as there were so many debts among them a person would sometimes (and it was not uncommon) marry and pay this marriage "money" without a single slave actually passing between them, *i.e.*, B wants to marry A's daughter, so he will go to C and to D who each owe him a male slave, and will take them to A, who accepts them as his debtors; then B will go to E and F who each owe him

a female slave, and these debtors of B will be taken to A who accepts them as his own debtors; now C, D, E, and F have no slaves they want to part with, so they in their turn will look up some debtors and take them to A, who will again accept these new parties as his own debtors. This was called *bwaka nyungu* = to pass on, or throw over a debt (or credit as the case may be) from one to another. I have known more than one case in which the father of the girl has had the debt worked gradually back to himself, and in giving his daughter in marriage he has received nothing, but has paid some of his creditors.

During the time the man is collecting the marriage money, he will build a house, if he does not already own one, and the girl will prepare a farm for herself. After the above described ceremony is over, the girl borrows all the finery she can of her female friends, decorates herself with oil and camwood powder, and for two or three weeks walks about the town with her husband—a sign to all that she is now his wife. If the man has already a few wives they will help to "dress her" by the loan of their own trinkets and will lead her about the town, as a proof that she is now a fellow wife and belongs to their husband. They exhibit no jealousy, but regard her as an acquisition—the new wife being one more to help keep the husband. During this period the man buys all the food, but when the "honeymoon" is over the girl takes up her farm work, and settles down to ordinary life. From that time she brings home each afternoon some of her farm produce to prepare for her own and her husband's meals. The husband, however, must find the meat and fish for such meals, and must be willing to share them with his wife or wives.

If the woman is a slave there are no preliminary gifts, no "bespoke" money. The sum agreed upon is paid, and the woman is taken to her new owner's house. There is no "honeymoon" for a slave wife. The children of such a marriage are called *mbotela* = semi-slave, indicating that one of the parents is a slave. If a man cannot afford to buy a slave, he hires one as his wife, and any children born to them belong to the owner of the slave woman, and not to the father and mother. A man will sometimes borrow a wife from another man for three or six months, and will pay a fixed sum according to the length of time he has her. Any children born of such an arrangement belong to the real owner of the woman.

A man can marry as many women as he can afford to pay marriage money for, but to each he must give a house, and all his free wives have equal rights, but slave wives are treated as slaves. Polygamy was very general, a monogamist was the exception, and monogamy was the result of poverty.

If a free woman did not want to marry the man who was trying to arrange for her, she would tell him frankly that if he persisted in marrying her she would run away from him. If, in spite of this threat, he completed the arrangements, then one day she would escape to a neighbouring town, and put herself under the protection of the chief by tearing his cloth. The chief would give the husband notice of what had happened, and before he could get his wife back he would have to pay the chief 600 brass rods = 39*s*. If the man would not then permit her to

marry the man she wanted, she would run away again, and again, and every time she ran it would cost her husband 600 brass rods. A sensible man would take warning by the first threat and would not marry her. If a free woman were badly treated by her husband, she would resort to the above method of making him pay for his ill-treatment of her, and would thus force him to use her more kindly. A slave wife he could kill for acting thus, but a free woman has a family not far away who would avenge her murder. The only redress for a badly treated slave is to escape to a place so distant that her owner cannot or dare not follow her. This has a restraining effect on his anger towards her, and enforces considerate treatment of her.

The following is a more drastic way of punishing a husband for ill-treatment: A woman has been very badly treated by her husband and in spite of her protests and warnings he continues to ill-use her, so one day she runs to the *nganga* and smashes the *eboko* = the fetish saucepan of the "medicine man," and in so doing she commits a very great offence. The *nganga* therefore holds her as a hostage until her husband redeems her by the gift of a slave and the payment of a sum of money to replace the *eboko* and make fresh medicine. Having paid the money he will treat his wife better in future, or she will again break the *eboko*.

Free men did not, as a rule, marry slaves, but the slave woman was given to a slave man, and thus she helped to make the slave contented with his lot in the town and tribe; she kept him in food as well as contributing to her master's keep, and enhanced the wealth of her master by bearing children which were slaves.

Sometimes, in anger, two men would exchange their wives, especially if one man's wife was continually running after the other man.

Above the age of five years it would be impossible to find a girl who is a virgin. The only thing a man can do is to see that his wife does not commit adultery after he has married, without his consent and receiving compensation for it. Should she do so the man is punished by a fine, but the woman goes unpunished. If she were punished she would not confess, and without her confession the husband could not enforce a fine on the man. The woman's word is always taken against a man. I have a strong suspicion that this power is often abused. (1) By the woman to pay off a grudge against someone who has slighted her, and also to be regarded by the other women of the town as one after whom the men run. (2) By the husband as a means of replenishing an empty purse—the fine being shared by the husband and wife. There are, undoubtedly, women who remain faithful to their husbands, but there are very few.

If a woman does not know, or will not perform, her duties properly as a wife, *i.e.*, will not farm, cook, etc., the man can take her back to her family and receive in return the price he gave her family, but not the "bespoke" money. Should she die within a few years of marriage the man can claim either another woman or the return of the marriage money.

There is no doubt that in a family there is great freedom of access to the women, belonging to the members of the family, by the men of that family. To

inflict a fine for such would be like punishing one's self, for the money belongs in a way to the family.

When a free woman wants to leave her husband, or have a divorce from him, she sends a "token" to the man of her choice who, if desirous of possessing her, goes to the husband and tries to arrange the matter. If the husband is unreasonable in his demands—wants too high a price or too much marriage money, or wants the whole sum paid down at once, then she resorts to the expedient of running to a neighbouring chief (as mentioned above), and the husband is soon brought to his senses. If the "token" sent is returned she knows that the man does not want her, and if her family is unwilling, or unable through poverty, or think that she has no reasonable excuse for a divorce, and consequently will not return the marriage money, she must remain with her husband. To run away to another town, without just cause, is to make her name a by-word in the town, and the native is very sensitive to public opinion, such as it is.

There is not the same desire for children, on the women's part, as on the Lower Congo. This may be accounted for by the fact that the children belong to the husband, and not to the wife as on the Lower Congo.

A man cannot marry his mother, his sister, his aunt, his daughter, his grandmother, nor his granddaughter. Neither can he marry his nieces or cousins—they are his brothers, sisters or children. He can marry his father's wives but not that one who is his own mother.

XXXVI. The Family.

If the children are born of a free mother, or of a slave who has been bought in the ordinary way, they belong to the father. The children inherit from their father's, and husbands inherit their wives' property. The children of a hired woman belong to the man from whom she was hired (see Section XXXV). However old a woman may be, she does not remain a widow after the mourning for her deceased husband is over. Directly her husband dies she becomes the property, *i.e.*, the wife, of her husband's heir. He, however, does not claim her until after the time of mourning.

A child will visit his mother's family, and will remain with them for periods varying from six months to two and three years. Some women, just before confinement, go and stay with their mothers and families for the confinement, and for six or twelve months afterwards, paying only short occasional visits to their husbands, and receiving the same from them. There were many exceptions to this custom.

The status of a child depends upon the freedom or the slavery of one or both parents. A child of slaves is a slave; a child of a slave mother by a free father is *mbotela* = semi-slave, and his position in the town is higher than that of a pure slave, and higher than that of a child of a slave father by a free mother, but not so high as that of a free born child. The child is kin to the father only.

The father during the pregnancy of his wife is prohibited certain foods, and may not hunt or fish during the pregnancy and confinement of his wife, unless she goes to a "*nganga*" and has certain ceremonies performed on and over her (see previous section). The prohibitions varied considerably, and when a man was observing these tabus, he was said to be in a state of *liboi*, a noun derived from the verb *bwa* = to deliver of a child, to be confined. I have always regarded this as a remnant of "*la couvade.*" They have no tradition of the man ever having taken the place of the confined woman by lying in bed during confinement.

Among the Boloki, the children of a man by his various free wives had full rights of inheritance within the limitations described under a previous section; see *Inheritance.*

When a man divorced a wife who had a child of tender age, the child was allowed to remain with her until he or she was about ten or twelve years of age, when he was given up to his father, but was allowed to visit his mother should she be living in a neighbouring town or district. The father has the right to kill his own child, and although the act may be strongly condemned by neighbours, they have no power to punish him even though it may be a clear case of murder. I may say that I never heard of a father killing his child while I lived among them; but there were many cases of a father pawning his children for debt, and occasionally selling them.

There is no adoption, but there is both blood-brotherhood and milk brotherhood, but these carry no right of inheritance, although to the latter a portion of the estate is sometimes given. There is also milk sisterhood, and when a woman is a milk sister it is not usual for her milk brother to marry her. It is permissible but is regarded as irregular. There is no blood-brotherhood between men and women.

Blood-brotherhood was very common and was performed with much ceremony (see Section XLI). The effect of this rite was to stop all feuds and cause the contracting parties to act in all respects as blood relations. They were supposed to warn each other of danger, *i.e.*, of arranged raids or reprisals on their respective towns, to help one another in difficulty, to hold property in common like members of a family, and to lend to each other without interest, and without dunning for repayment. I think these matters were more honoured in the breach than the observance. However, I have again and again seen a disturbed district, where during several weeks there had been much fighting and many killed, quiet down directly the headmen had made blood-brotherhood. All the important men of the district had many cicatrices on their arms indicative of the frequency with which they had performed this ceremony. I was asked many times to submit to the same rites, but always refused for obvious reasons.

The length of time that a child remained under the control of his father depended largely on the character of both, and the strength of will each possessed. There were no unmarried men's houses in the villages, consequently, male and female children belonging to the same mother were brought up together in her house until such time as the boys were old enough to build a house for themselves,

if they cared to do so. There was no age limit. I have known quite big lads to sleep in their mothers' houses, and I have also known smallish lads of energy and initiative combine to build a hut for themselves of which they were very proud.

XXXVII. Widows.

As stated in a previous section there were really no widows among the Boloki, for as soon as the husband died, they became the wives of the heir. If the woman were free and did not like her new husband she could act as described under Section XXXV.

Upon the death of the man, his widows cry and drink water mixed with clay (*emolo*), strip themselves absolutely nude, or dress in a few leaves, and rub dirt on the body (sometimes only half the body is covered with dirt, and the other half left its natural colour, giving a very grotesque appearance to the mourner), then taking something belonging to their late husband, they parade the town in pretended search for him. After the funeral they sit in their houses for five or six days until the sister of the deceased man gives them permission to leave the house, and for six weeks or two months they walk only in the "bush," and if they hear anyone coming they hide, and during this time they may not walk about the town; then for another three or four months they wear long untidy-looking grass clothes (*bilembu*). If their late husband was a great hunter then the widows will not eat meat during the period of mourning; but should they during the time of mourning "live well," the deceased man's sister or daughter will upbraid them for not mourning properly, and the folk in the town will regard them as callous, hard-hearted women, and the public opinion of the district will condemn them.

XXXVIII. Morals.

The adjective *lau* has a wide range of meanings which can only be accurately understood by their context. *Lau* may mean : good, right, just, reasonable, fine, proper, admirable, beautiful; from *lau* the noun *bolau*=goodness, etc., is derived, but it is in no way indicative of a moral quality. In the same way with the adjective *bi*=bad, wicked, base, evil, etc., and its noun *bobi*=badness, wickedness, etc.; this was the only equivalent we could find for our word sin. In all our translations we had to take the best words, the nearest equivalents, and group round them the moral ideas we wished them to convey. We could not discover any words for virtuous or vicious; a person either had *bijalele bilau*=good ways, good habits, or *bijalele bibi*=bad ways, but these referred more to the presence or absence of rudeness = *bolongono*, or disrespect to superiors =*bompetokolo*, or greediness=*ejaki*, etc., than to any moral or immoral qualities about him. In fact, if he stole from a stranger and lied wholesale to him he would be admired by his neighbours as a clever, sharp-witted fellow, but if he robbed his neighbour, or slept with his neighbour's wife without first paying him, he would be condemned by public opinion and regarded as one who had *bijalele bibi*=bad habits.

Public reprobation was only visited upon those who committed wrong acts so clumsily as to be found out in their wrong doing. I have heard them speak admiringly of one who, while working for a white man, robbed him so cleverly as not to be discovered, and such an one would bring back to his town the proceeds of such a robbery and boastfully describe how he committed it; on the other hand I have heard them call the clumsy thief a "fool," not bad nor wicked, but *elema*= stupid, fool, etc. Robbery, adultery, wounding and murder, when committed within the limits of one's own family, would receive strong general disapprobation but no punishment, unless the offender was a boy, and then a sound thrashing would be administered; for would they not be punishing themselves if they inflicted a fine, etc.? But if committed outside the family limits then punishment would be meted out according to the wrong done.

In dealing with an alien it would not be considered wrong to rob, beat, abuse, or even murder him, unless he had come on a visit, for trade or other purposes, to some one in the town. He would then be under the protection of his host, and would receive his hospitality and hence the hospitality of the town and neighbourhood. The host would have a *casus belli* against anyone who molested his guest. Men and women travelling alone or in two's and three's in places where they are not known, run the risk of being captured and sold as slaves. Such defenceless travellers would hide by day and travel by night to their destinations. Green in his *Shorter History of England* says: "that in ancient times the painted British savage on approaching a village sounded a horn to warn the villagers of his coming, otherwise he would be treated as an enemy who tried to surprise them by stealth."

Among the Bangala it was the custom that when the canoe containing six or more men drew near to a town they had to beat a drum and sing to notify the folk of their coming, otherwise they were treated as enemies and laid themselves open to an attack. For a canoe of strangers from neighbouring towns or districts to approach a town unannounced by drum or song was regarded as an act of war. If their coming were peaceful, why were they afraid to drum and sing? I have seen the crew of such a canoe badly handled for omitting these courtesies, and but for our presence some of the travellers would have been speared.

Death and disease were regarded as abnormal states, and only to be accounted for by witchcraft and the use of fetishes against an enemy; therefore if a man were ill someone was causing the disease by the aid of a charm or fetish, hence everybody had protective charms to ward off the malignant spells used against them. It did not necessarily follow that the man suffering had done wrong, but that either he or one of his family had committed some overt act against someone who had a powerful fetish from which their charms were unable to protect them. Sometimes the spirit (*Mongoli*) of a deceased enemy would inflict an illness on a family, a member of which had wronged him when in the body.

A man who was hard, stern, unmerciful, and unsociable was supposed to be punished in the nether regions. After the death of a man of this character I have heard the natives say: "So and so is having a bad time now in the nether world

(*longa*)." Whenever I tried to ascertain the nature of the punishment, they were always very indefinite, and the most that I got was: He is being badly humbugged, befooled, derided, etc.; the word used was *siswa*, which contained no idea of physical pain.

The natives, when speaking to us, would condemn evil practices, as lying, cheating, stealing, adultery, etc., yet I never knew a native to be boycotted for doing wrong, but I have known them to be ridiculed for being detected, or for the paltriness of their excuses. The man or family that suffers the wrong will condemn it, and the people to whom they speak will strongly censure the outrage, but at the same time their relations with the offender will remain as good as ever, and you will see them laughing, talking, and walking with him within five minutes of his exposure.

Promises and oaths are ratified by each contracting party putting a curse on the other should he break his oath, and illnesses and bad luck are often looked upon as due to unfaithfulness to one's oath. Sometimes tabus are put on one another by the contracting parties, and so long as the tabus are observed they are reckoned as faithful to their oaths. This is especially so in the covenants of blood-brotherhood, and to disregard the tabu is either death, or some great disaster. Many of their folklore stories are illustrative of the evils of breaking blood-brother tabus.

Adultery is a personal injury, for the offender has used something that does not belong to him without the consent of the owner. A man can arrange to use another man's wife for a certain period at a fixed price and no wrong is thought of it. All unnatural acts (bestiality) are condemned and the offenders ridiculed and abused, but such acts are very rare because where the women and girls—slaves and free—of the family have so much liberty there is little or no temptation to commit such acts. Still I have heard of its being attempted.

The greedy man, the coward, the thief, the scamp who disregards the feelings of others, and rides rough-shod over all the social and communal institutions, the man who is impotent—not able to beget children, the man who is accused of witchcraft and will not take the ordeal, and the incestuous are all put into the songs which are sung at the village dances, and there is no more powerful factor in influencing the native to good or evil than the mention of his name in an impromptu song at the village dance. The paragraph in our newspaper is read by comparatively few people, and only a small percentage of those who read it know the person mentioned, but the song is sung, night after night, by all the village—the very neighbours of the one thus held up to ridicule, or honour. The village song incites to deeds of reckless daring in times of war, it brands and shames the cowards, and it restrains considerably the rascals, while it maddens to the verge of suicide the impotent.

XXXIX. Sexual Relations.

Some of the queries under this head have been already answered under previous sections. As a rule we did not care to sit down and talk about such matters, but occasionally we gathered some information while listening to and settling their palavers.

From early age to puberty the boys and girls had free access to each other. After puberty, restrictions were placed on the girls, and the act was regarded as adultery, and was punishable by fine, if the offender did not belong to the same family as the girl. The fine was paid in brass rods or their equivalent, and ranged from 100 (=6*s.* 6*d.*) to 300 and 500 rods. In Monsembe I only knew of one prostitute, and she was treated with little or no respect by the women, and lightly spoken of by the men. *Loleka*=whore, prostitute, and *mokakanu*=fee given to a prostitute.

I have never heard of mutilation as a punishment for adultery among the Bangala. I have seen it stated that among them an ear was cut off as a punishment for this offence. I travelled constantly among them for nearly fifteen years and only occasionally saw either a part or the whole of an ear cut off, but I was also told on enquiry that that was a punishment for *repeated thefts*, and those thus mutilated *were slaves*. Free men were fined for thefts, not mutilated. I have known men to be financially ruined through having to pay fines for repeated acts of adultery, but if the ear cutting had been the punishment there would not have been a single man with both his ears, for there was not a morally pure one among them.

There are two names for an illegitimate child—*mwana wa ngangi*=child of a mistress, *i.e.*, a woman who has been hired from her husband, family or guardian for a fixed period at a certain stated price; and *mpampoka*=a child whose father is not known. In the former case the child would eventually be owned by the proper husband or guardian of the woman, unless the lover had made other arrangements at the time of hiring his mistress; in the latter case the child would belong to the woman and hence to her family, and in both cases the child would remain with its mother until it was ten or twelve years of age. A man hiring a woman would have to pay a larger fee if he desired to claim any child resulting from their intercourse.

Undoubtedly there are both solitary and mutual masturbation, and men when standing about will often unconsciously play with themselves even when they are standing or sitting round white people—male and female. I have many times by word or gesture called their attention to it, and they have stopped at once and looked very shame-faced over it. I have never seen a woman do it. Probably their crinoline-like dresses did not easily permit of it. The dress of the men and boys made the act very easy of performance, and I should say rather encouraged it by the friction exciting them. I never saw a native who wore trousers do it openly

like the others. Probably this evil often caused the pains in the small of the back from which they frequently suffered—lads and men alike, and occasionally the swellings in the groins, and much of their listlessness.

Occasionally I heard boys laughing at one of their number who had tried to have intercourse with a goat, and from what they said while chaffing their companion I should judge that bestiality was not common and arose more from a desire for novelty than lustfulness. Sexual excess was well-known among them, as they had words that indicated physical conditions that were the result of this cause, and there is no doubt that the frequent cases of impotency one observed were caused through sexual excess. I have met many young men who were bachelors, and older men who had been widowers for years, but I do not for a moment think they practised celibacy. They were simply too poor to buy a wife, but probably not too poor to hire one for a time. Wherever I have lived I have noticed that polygamy has resulted in a few men having the women—and they the older men, while the virile young men have not been able to secure wives. This has resulted in illicit intercourse, and has made abortion common in order to hide their condition from the husbands, and save the lovers heavy fines.

The African thinks that a man cannot live without a woman. And I have heard them, both on the Lower Congo and the Upper, solemnly discuss whether we were properly made as we always refused to accept their offers of women.

If a woman is addicted to adultery her husband will put a hook in the vagina and, drawing it out with force, will tear the flesh badly. It is a punishment much condemned by the people and dreaded by the women, and has undoubtedly a deterrent effect upon them.

Sodomy between men is very common, and is regarded with little or no shame. It generally takes place when men are visiting strange towns or during the time they are at fishing camps, and away from the women of their family. If a man committed it with a woman he was at one time liable to be punished by death, but now he is tied up, and fined heavily by the elders of the family and town. It is not simply a family offence but an insult to the community, hence the elders of the town take part in judging and punishing the man.

XL. Death and Burial.

Three causes of death are recognized. 1. *njambe*=God, providence, the destroyer; 2. To die by another's witchcraft; 3. To die by one's own witchcraft.

(1) In cases of accidental death as the swamping of a canoe in a storm, or through overloading it, they said: *Njambe* had caused the accident; but other accidents in which they observed what they considered exceptional circumstances, as the upsetting of a canoe by a hippopotamus or crocodile, they put to the account of witchcraft. Thus a canoe swamped in a storm was an act of *Njambe*, but a canoe upset by a crocodile was an act of witchcraft, as no crocodile would have done it unless it had been instructed to do it by a *Moloki*=a witch, or unless

the *Moloki* had gone into the animal and made it commit the outrage; therefore it was necessary to find the *Moloki* and punish the person who harboured such an evil spirit. The word for sorrow is *nkele*, which really means anger, indignation, and the idea is that they are "angry" that their relative has been done to death by the *Moloki*. There is no other word for grief at the death of anyone than this *Nkele*.

(2) *Awi moyengwa*=he died by the witchcraft of another. On the death of a patient the body is opened and the arteries connected with the liver are examined, and if they are full or only one is empty then the person was bewitched to death, consequently someone is accused and the ordeal is given to one after another, until the guilty person is found, *i.e.*, until someone succumbs to the ordeal and falls intoxicated by it to the ground.

(3) *Awi na likundu*=he or she tried to kill someone else by witchcraft, and the other party's fetishes, etc., were too strong, and it has resulted in the bewitcher's own death. The *nganga* decides the matter, for he investigates the corpse when it is opened, and if the arteries near the liver are empty then the man (or woman) died as a result of his own witchcraft. If one artery only is empty that counts for nothing, but if four or five are empty then the *nganga* say: "That one is the *likundu* (the occult power), by which he so skilfully made canoes or did his smithy work (according as the man was a canoe maker or blacksmith); that other empty artery is the *likundu* by which he was successful in fishing or hunting and so on, and that other empty one is the *likundu* by which he bewitched people, hence someone with a stronger occult power has overcome and killed him." If only one artery is empty, that is allowable, as a man must have skill to do ordinary things like other folk, but if several are empty then he had more than his share of occult power and no one pities him in his death.

Relatives attended the sick and nursed them very faithfully, and it was a sign of true friendship to visit a sick acquaintance, or to send regularly and inquire after his progress in health. The women were so fond of attending the sick, *i.e.*, sitting in the house and giving advice, that they neglected their work and various duties to do so. Hence a sick person would often have a house full of visitors, attendants, and advisers, and if the complaint was infectious it was thus quickly spread through the town. I have gone to see a smallpox patient, and found the house literally packed with folk. Isolation was derided, and precautions were foolish, for none of them would take the complaint unless they were bewitched.

When a man of any importance died, those who were expert in the art of decorating corpses would attend and decorate the body with coloured pigments, beads, and fine cloth, and the artists would charge two brass rods per person to view the body. The family found the cloth, pigments—arnotta dye, chalk, camwood powder, blue and yellow earths—beads, and cowrie shells, bottles and looking glasses. The artists gave their time and skill to the family for a small fee, and took as their perquisites the brass rods paid to view the picturesque (?) corpse. As a rule the body was buried within three days after death, and by that time it

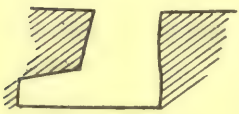
was unsavoury. When, for various reasons—as lack of means to give a good funeral—it was not convenient to bury the deceased so soon, they took out the entrails and buried them, placed the corpse on a frame, lit a fire under it, and thoroughly smoke-dried it; thus they would keep it for a more convenient time. This might be a matter of weeks and even months. The dried body was tied in a mat, put in a roughly made hut, and an occasional fire made under it. Another mode is as follows:—The body is tied in mats, and buried in an ordinary but shallow grave, a big fire is made on the top of the grave to dry up the juices of the body, and so preserve it. At a more convenient time a coffin is made and the corpse buried properly; this is called *likaku.*

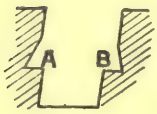
Coffins were often made out of old canoes, by men who went about the district for that purpose. Considering the material and tools they were well made, the various pieces fitting closely together. These native "undertakers," on arrival at the place where their services were required, put up a fence of mats so as to make a private workshop. They charged so much for the job, and were kept in food and drink, and any dogs, goats, etc., that pushed open the mats and entered their workshop were liable to confiscation, if their inquisitiveness caused them to persist in entering after they had been driven away twice. The coffins were sometimes lined and covered with cloth, but more frequently stained with arnotta dye, and picked out with yellow and blue pigments. All the materials were supplied by the family. Clumsily made native nails, or wooden pins, were used until they were able to procure nails from us. Sometimes the parts were laced together. Poorer folk were rubbed with oil and red camwood powder, bound round with cloth and tied up in a mat, and those who were very poor were tied simply in their sleeping mats; a corpse was rarely thrown into the river or bush. When the time for burial arrived the coffin was carried round about the town on exhibition, then the corpse was placed in it, and men conveyed it to the place of interment, followed by relatives male and female—not wives—friends and towns-folk generally. The wives remained behind to continue their mourning. A person often died away from his house, and frequently away from his town.

When a man died his wives would throw off their dresses and wear old rags (sometimes they would go absolutely naked) pick up anything belonging to him—his chair, spear, pipe, mug, knife, shield, blanket—anything that first came to hand, and having covered their bodies with a coating of clay they would parade the town in ones, or twos or threes, crying bitterly and calling upon him to return to them. At times in their crying they would stop and say: "He is gone to so and so, we will go and find him," and away they would start off in a business-like fashion in search of him. This they would keep up for a day or two, then the women of the town would bedeck themselves with creepers, vines, leaves, and bunches of twigs, and forming themselves into a procession would march through the town chanting the praises of the deceased. Men would paint and arm themselves as for a fight, and would imitate the acts of the deceased as a warrior, and if he had been remarkable for fighting on the river they would get up a sham

canoe fight in his honour. Fifteen to twenty canoes, laden with men armed with spears, shields and guns, would go through all the manœuvres of a mimic river fight, firing their guns, pretending to throw their spears or deflect them with their shields, circling round each other amid shouts of their prowess, or laughter at those who lost their balance and fell in the river. Those ashore would crowd along the bank and yell out directions, approbation, and encouragement to their friends in the canoes. It was an amusing and interesting sight and seemed to be thoroughly enjoyed both by actors and spectators. This they called *kembela* = to praise, glorify, from *emba* = to sing about.

The graves were of three kinds: 1. When the grave was dug deep enough a cutting was made at the side to lay the corpse in so that the earth did not press on the body, thus: 2. A notch was cut in the earth along the two sides about 2 feet from the bottom and planks or sticks were laid across after the body was put in position, and the earth was thrown on the sticks. (A and B notches or ledges to take planks or sticks). By this means the earth was kept from contact with the coffin. 3. An ordinary straight-sided hole and the earth put on the body. 1 and 2 were for important men—those whose families could afford to pay for the coffin and the better kind of grave, and No. 3 was for the common people. There was no special time for burying, and no particular position for the grave and corpse. I have known them to bury their dead at different times, in the morning, afternoon, and evening. Most bodies were buried in one or other of the houses (or near to them) belonging to the deceased, consequently the position of the grave depended on whether the house ran east and west, or north and south, or whether the row of houses owned by the deceased was parallel or at right angles to the river.





In the old days it was the custom to kill two slaves and put one under the head as a pillow, and one under the feet of the corpse. In every family of importance there was a slave wife, who went by the name of *mwila ndako*, and it indicated that she was to be buried alive with her dead husband. If, however, this wife had a child before her husband died, then another woman took her place—a young woman was generally selected for this doubtful honour. The number of wives buried in the grave was in proportion to the man's wealth and importance, but he always made certain of one—the *mwila ndako*. We were able eventually to persuade them to stop this custom, but it was not until we had gained their confidence and goodwill by nearly three years of residence among them.

After the coffin had been put in the grave, men came forward, and taking a spear, called upon the spirits of those the deceased had killed in war to attend their conqueror in the spirit world, and every time the name was mentioned or an order given a thrust was made with a spear. The person whose funeral I attended had killed seven persons, and their skulls were at the base of the wild fig tree just

in front of his house. Different men called on the different spirits, and so far as I could ascertain it was those who knew all the particulars of the slain, and the circumstances attending their death that had to call on them to attend and obey the deceased. It seemed to me that by giving details of the person killed, the spirits could make no mistake as to who was meant, and by giving details of the manner of death there could be no mistake that a claim on their service was established. Some brass rods were buried in the grave, and spears, knives, and two or three other things were put in the coffin. Over the grave a shelter was often built, with a rough table under it. On this table were put bottles, saucepans, plates, mugs, etc.; under and at its side were put stools and chairs, but everything was "killed," *i.e.*, broken. All the natives told me that the articles were killed to keep people from stealing them, yet they had an idea that the things thus displayed not only served as a memento of the deceased but helped him, in his present state, in some indefinable way. Undoubtedly they had forgotten the reason for "killing" the articles. The stealing reason was not sufficient to meet the case, as no one would be found with so much hardihood as to rob a grave, they had too wholesome a fear of spirits to do that; besides detection would have been easy and dire punishment follow the theft.

A man while mourning for a relative or a wife would wear rags, or an old string fish net, and would allow his body to go unrubbed with oil and camwood powder. Utter disregard of one's personal appearance was a sign of great grief for the departed. Men also at times wore a woman's dress instead of a man's in token of sorrow, and would shave half the hair off, or do it up in little bunches or knots, and shave the hair off the spaces between them. Some would rub their bodies with clay. The modes were many, and varied according to nearness or remoteness of relationship. I think in some cases they exhibited real sorrow, but in the majority of cases there was more noise and show, than grief.

Rarely did a man give way to crying, and if his dearest friend died (not his relative) he would exhibit no sign of mourning, not because he did not feel sorrow, but because he did not want to attract attention to himself as a person who mourned for one who was not his relative. It would have been most unusual, and besides if he had shown signs of mourning, folk would have constantly questioned him as to which of his family was dead.

The following notes I sent to the Folk-Lore Society in 1907, and they were published in their *Journal* for March, 1908:—

"One day I saw an old woman whom I knew very well, sitting in the centre of a ring of fire, and upon enquiry I found that she had had much to do with preparing a corpse for burial, and at the close of the ceremony she was purified by the fire being lit around her. In my unpublished dictionary of the Ngala language, I have the following word and its explanation: *Tumbujela*, to purify by fire a person who has touched a dead body. A ring of fire made of small sticks encircles the person, who takes a leaf, dries it, crunches it in the fist, and sprinkles it on the fire, moving the hands over the fire ring; when the fire goes out the

nganga takes hold of the person by the little finger and lifts his or her arm, *amobili loboko*, and the person comes from the fire-circle purified.

"Walking one day in the Monsembe village I saw an incident that recalled Tam O'Shanter to my mind. There had been a death in the family, and the relatives had just performed all the necessary rites and ceremonies, and were returning to their homes. A small trench some twenty feet long was dug with a hoe. The relatives took up their position on the side of the trench nearest to the grave, the *nganga* stood on the other side, and his assistant was placed at the end of the trench with a large calabash of water. At a signal the water was poured into the trench, and while it was running the *nganga* took each person by the hand, and mumbling an incantation, pulled him or her over the running water. When all had been pulled over one by one the water was allowed to run until the calabash was empty. I asked the reason of the ceremony, and they told me it was to keep the spirit of their buried relative from following them."

At the funeral of a man there is more or less firing of guns, according to the importance of the deceased. This they say is to ensure for him a good entrance into *Longo* = the nether world, a place situated somewhere underground. When the departed spirits hear the firing they inquire who is coming, and look towards the entrance and prepare to give the new comer a welcome in proportion to the noise being made at his funeral. The spirit of the deceased waits near the entrance to *Longo* while they decorate his corpse, dig the grave, kill the slaves and wife who are to accompany him, then comes the firing, the entrance and the welcome. If the deceased has been a great fighter the family will arrange occasionally a sham fight in his honour for some two or three years after his death.

During the first few hours after the death of a woman nearly all her female neighbours and relatives cry as though their hearts were broken, but the next day they commence dancing, and continue to do so at short intervals for five or six days. The husband hires a professional dancer to act as master of the ceremonies.

If the family of the deceased man were troubled with much sickness, and a witch doctor said that it was due to the dissatisfaction of the spirit of such an one because no offering had lately been made to him, then the family would kill a slave as a sacrifice, and send him with a message to their troublesome relative, and a request that he would not cause them any further misfortune. We induced them to give up this custom, but the timorous ones compromised the matter by burying in the grave of their deceased relative some brass rods equal to the price of a slave. The occasion was as follows:—The river was rising rapidly and flooding the low lying town of Monsembe, and as the water rose higher and higher the headmen met together to decide what was to be done to cause the river to subside. I attended the conference, which lasted three hours. They suggested one reason after another for the flood, and at last they were of a unanimous opinion that the father of one of the men present was angry with his family for slighting him so long, and to show his disapprobation he had caused the river (River Congo) thus to rise, and the

only way to secure its subsiding was to throw a human sacrifice into the river. I protested strongly against this murder, and pointed out to them that in order to stop the river from rising they should send their "rain doctor" 500 miles up river to stop the rain from falling, and thus allow the waters to subside. They answered that their "rain doctor" would have no power if he went so far, as he could stop the rain only in his own district. We had a long talk, and at last they were persuaded not to throw a person into the river. They compromised the matter, and got up a mimic canoe fight in honour of the dissatisfied spirit and scattered 600 brass rods in the river—the price of a slave—in lieu of a human sacrifice. A short time after the river began to subside and all were satisfied with the result of the conference and their compromise.

At a town above Monsembe on one occasion, some years before the above incident, they decided to throw a slave into the river and the one selected was blind in one eye. He was thrown in, but somehow got loose and swam ashore, and told the people that the spirits did not want a one-eyed person, so they had set him free and sent him back. By his wit he saved his life.

The women mourned from three to six months according to the importance of their husband, *i.e.*, they put up a rough screen of rough grass walls near the grave and sat and talked and cried or chanted as they felt inclined. They were not supposed to go to their farms or pay visits, or engage in any of their former occupations, and as they could not go regularly to the farms their food was meagre so they were also said "to fast" for that period. At the end of the mourning and fasting they washed, donned their better dresses, and were distributed among the heirs of their deceased husband. See also Section XXXVII, Widows.

If a slave committed suicide his master would throw his body into the river: but a free man who committed suicide was buried in a shallow grave with little or no ceremony because he had died by his own hand. Women were buried with the same ceremony as a man, and in accordance with their position in the town. When a woman dies, who is held in much honour by the other women in the town as a good farmer and one who has taught them much and frequently about farm work, and under whose leadership they have been successful, they will, a few days after her death, form a procession, decorate themselves with leaves and twigs, and dance and chant her praises through the town, and will then go to the farm and hoe up and plant a large bed of cassava for the use of the deceased woman's family. The family will supply the dancers with sugar cane wine for this festivity. This is called *Muntembe* from *ntembe* = stems of cassava plant.

In 1890 I saw in Bonjoko—a town just below Monsembe—the entrance to a house 6 feet by 8 feet paved with skulls, and it was customary not only to use skulls in this way but also to put the skulls of enemies at the base of palm trees, and to use them as foot stools. The desire was, by these indignities, to insult the fallen enemy, and to have some hold on the spirits of those slain in war that they might attend their conqueror in the spirit land, as seen above.

Supplementary Notes to Part I (*supra*, pp. 97–136).

Section II, p. 99. Personal Ornaments.

Re ornamentation during pregnancy. About three months before confinement the "medicine man" (*nganga*) ornaments the woman's body with coloured pigments such as white chalk, blue earth, and red camwood powder, and he ties some leaflets of palm fronds round the woman's neck. These pigments and frondlets are charms to ensure the easy delivery of a healthy child. "Medicines" are also rubbed on the woman's stomach to bring success to her husband and family in their hunting and fishing expedition; and the woman from the time of putting on the above charms must live in her own house, and have no further intercourse with her husband until the child is born and weaned. When the *nganga* has smeared the pigments, etc., on the pregnant woman he places a tabu on certain foods, but not the same for all women. One woman would not be allowed to eat one kind of fish, and another a different kind, while another might not be permitted to eat the flesh of hippopotamus, or goat, or antelope.

Section XI, p. 106. Metallurgy.

The social position of a smith among the natives was very high, and he was regarded with as much respect as a professional man is in Europe. The natives thought that the smith was not only wise and skilful, but that he practised witchcraft in order to perform his smithing properly. No one was allowed to step over a smith's fire, nor blow it with his mouth, nor spit into it as either of these actions would pollute the fire, and thus cause bad workmanship. Any person polluting the fire would have to compensate the smith by the payment of a heavy fine. A blacksmith taught his son the trade, but would not take an apprentice on any consideration. It must be remembered that the word "son" (*mwana lele*) covers a wider relationship than in English, as the male children of the smith's brothers and sisters would be regarded, and spoken of, as his sons, *i.e.*, all his nephews are his sons.

Section XIV, p. 113. Fire.

When the natives wanted to make a new fire, as they did under certain conditions, they took a piece of Mopumbu tree for the lower stick and any kind of wood for the upper one. The top stick was not twirled but rubbed up and down the lower stick. This fire was called *mweya wa yanji*, *i.e.*, newly originated fire, not a fire lighted from another one; fetish fire was made by the above process. Some people would have their food cooked only by such a fire for fear of witchcraft.

Fire was extinguished either by pouring water on it, or by dividing the burning logs; but the *mweya wa yanji* was never voluntarily allowed to go out, but should the rain put it out, either a new fire was made by rubbing the sticks together (in more recent times with flint and steel, and in these days with matches)

or was procured from a healthy person; but under no consideration from one who is being treated by an *nganga*, for to do so would be to run the risk of catching the sickness from which the patient was suffering.

To throw salt on a fire will cause a super-abundance of rain to fall. On the Lower Congo salt is regarded as causing the rain to stop when thrown on a fire, and is only resorted to when the farms are being destroyed by very heavy rains, and the efforts of the "medicine man" are not successful.

Witches are held responsible for the lightning; but when the *nganga ya buka* clasps his hands and says: "*ita!*", the lightning will pass without doing any damage.

There was a fire found in the forest called *mweya wa ngundu* = phosphorescence from dead wood, literally, the ape's fire, as it was supposed to have been left by the *ngundu* = the anthropoid ape.

Section XV, p. 114. Food.

The people ate a black, nice smelling mud called *nguna*. It was prepared by the Libinza people in thoroughly dried balls and sold to the Boloki folk at Monsembe, who if they ran short of it, would break a Libinza made saucepan and nibble off pieces of it until they were able to renew their supply of mud balls. The only reason given was that it was nice to eat. Pregnant women ate a light clay called *emolo*.

Many natives now believe that European salt (*monana*) causes sleeping sickness so they will not touch it, but use native made salt (*mokwa*) in its place.

Section XVI, p. 121. Cannibalism.

The Boloki folk ate human flesh for the pleasure of it, and the palms of the hands were regarded as delicacies, although the whole hand was said to have much fat in it. There was no euphemistic term for human flesh used among them; and the bones, after being picked, were thrown away anywhere. The women among the Boloki did not eat human flesh, and they neither cooked it nor touched it. The men cooked it for themselves in saucepans, specially reserved for the purpose, and, although they did not believe that the qualities of the person eaten were imparted to them, yet they thought that human flesh had a beneficial effect on those who ate it, for if a person had bad ulcers he would quickly lose them after eating such flesh. Human flesh was never eaten with cassava, but always with plantain, as the latter enhanced the flavour of the meat. In Mwenga and Budza both men and women ate human flesh together, and also in some parts of the Bangala district.

Dead bodies floating down the river were drawn to land and eaten by some, but not by all; some had no objection to eating relatives by marriage, and even their wives, but they never ate their blood relations. When fighting they would not eat one killed on their own side, but if they captured the body of an enemy

they would eat it with gusto. I have seen them eat such, and I have known them bury those of their own side killed in a war. The mad and semi-mad would drink blood, and others, although they refused to drink it, would dip their hands in the blood of a slain person and smear it over their faces.

Section XVII, p. 122. Narcotics.

Sugar-cane wine.—See p. 119 for the mode of making, and customs relating drinking, sugar-cane wine. The drinking of sugar-cane wine made them "jolly" drunk, not mad and quarrelsome drunk as did imported spirits. Palm wine was drunk, but it was not a common drink as on the Lower Congo. *Jama*, an Indian hemp, was used, but very infrequently; but *bangi*, a hemp just imported from the Kasai River, is getting into favour. It has different effects on different folk: some become talkative, others stupid and quiet; some think they are going to die, and others dance and shout, while others again have frightening visions of the dead. These, together with tobacco, are only used by the men. During recent years snuff taking has been introduced from the Lower Congo.

Section XVIII, p. 123. Hunting.

Re *hunting dogs.*—The *nganga ya bwaka*[1] takes the selected dog and puts in its mouth and nose the juice pressed from a crushed shrub, called *mumpongo*, to make it a good hunter. When such a dog dies it is not eaten like other dogs, but is buried in a mat like a child, for it is a fetish dog, and hence is supposed to have a kind of spirit, which if not properly treated will bring bad luck to its former owner.

The hunter who makes traps (*motambu* = noose traps) for bush pigs and burrowing animals must have no sexual intercourse from the time of making the trap until he has caught something in it, and has eaten it.

The natives thought that the spirits (*mingoli*) of the deceased who inhabited the forests had power to turn the animals aside from the traps, and render them ineffective, so the first thing to be done was to call the *nganga ya bwaka*, who brought his mats with his charms and some saucepans, and after going through a secret ceremony which lasted a day he procured the spirits of the locality where the trap was set (or was to be set) and shut them up in a saucepan. Again, all those concerned in the hunt must chew red pepper and the pulp of the *nsafu* fruit, and, if anyone refused to eat this mixture or could not spit it out properly, it was taken as an adverse omen, and they did not proceed with the hunt. When the *nganga* had shut up the spirits in his saucepan, and the omen was right, the man who started the proceedings and two or three friends went and put up the spear trap. From the time of putting up the trap until an animal was killed in it and eaten these men had no intercourse with women, otherwise their luck would be bad.

[1] The functions of the various *nganga* will be explained in later articles.

These customs refer to the hunting of elephants, hippopotami, and other large game. The man who was responsible for erecting the trap led the hunt, and when the animal was caught no one touched it until the leader ripped open its stomach.

Section XIX, p. 125. Fishing.

Fishermen while making their traps (*molekɛ*) must not have any sexual intercourse, and this prohibition continues until the trap has caught some fish and the said fish has been eaten. The restriction may last some weeks or only a few days.

The following is an extension of the paragraph on *mwele* on p. 128 :—The river is full of spirits (*mingoli*) and if these heard the proper names of the fishers they might so work against the fishermen that they would catch little or no fish, so the fishermen hide their identity under the general name *mwele*.

Again, when a man lands with his fish the buyer must not address him by his proper name, but as *mwele*, or the spirits may hear it, and either mark him as one against whom they will use their influence another time, or they will impoverish the fish just caught, so that the man's chances of a good price will be lost. Hence he can make the one who breaks this rule pay him heavy damages, or compel him to sell the fish at a good price to restore his luck.

ON TEN'A FOLK-LORE. (PART II.)

By The Rev. J. Jetté, S.J.

The following notes are in continuation of my former article, published in the *Journal of the Royal Anthropological Institute*, vol. xxxviii, pp. 298–367.

Ałkéyar to-ledōye.

The Owl.

Nił-künka łledo, tsedeni. Rabe-ten'aka rulan. An-no-ted'oih,
A-married-couple cohabit, it-is-said. Their-children there-are. He-goes-hunting,
mizeni, ko ten'a. Te-tan, tsarałte an-no-ted'oih. Tse kū
it-is-said, the man. He-does and he-goes-hunting. And again
an-no-tałleyo, tōruno ko mo-'ot rałte ko-no-kedełkon. Tse ko mo-'ot
he-is-gone-hunting, while this his-wife she-is-sewing. And this his-wife
tłi niyo. Tse yutłi tłōtŏkŏt tse-leyo. Nił-kaatsen
out went. And riverward on-the-high-bank she-went. In-both-directions
Yūkŏnă runatł'an. Arurūyeł rél'é yūtŭră tānănă ronten kŏr
on-the-Yukon she-looked. And-then maybe over across suddenly a-rabbit
na-ralerałtł, tsedeni. Arurūyeł yaka mo kŏntŏkŏt kedałletłĕts.
is-running-across, it-is-said. And-then there(on) his shoulders a-black-thing-is.
Arurūyeł rél'é tadletlĕt: aruruyeł mo kontoko no-kodetortł.
And-then maybe she-broke-wind: and-then(from) his shoulders it-fell-down.
Tseyerotse rél'é yar ne-no-łleyo. Tseyerotse rél'é rałte
And-then perhaps (in) the-house she-went-back. And-then perhaps also
no-łletlun tse yudoo yurru ni-niyo. Ruyeł tuur ronten
she-dressed-up and down to-that-place she-went. Then there unexpectedly
nōlĕkŏnă kedeniledŭr, tsedeni. Tseyerotse yurru tlo y
blood is-scattered-over, it-is-said. And there a-dish in
roderélo, tsedeni. Tseyerotse ko te yar ye yeł no-ideyo.
she-gathered-it it-is-said. And-then(in) the her house it with she-went-back.
Tseyerotse yitłmāts, tseyerotse ko te-ten'aka eina rałte
And-then she-boiled-it, and-then these her-children(to) them also
tor-yiletlo. Tse tłĕdŏ rodādlelīdātsen ronten tetłektsen yi-ranīnōn.
she-distributed-it. And the-night not-being-passed suddenly all-of-them they-died.
Tseyerotse yi-no-rutlun, tseyerotse ra-no-kał-rarananilo. Aruruyeł
And-then she-clothed-them, and-then she-put-them-along-the-wall. And-then
rél' toruno atsar. Aruruyeł dzan roleł, tsedeni. Aruruyeł ko
perhaps meanwhile she-cries. And-then the-day passes, it-is-said. And-then the
ten'a no-ideyo. "Ne-ten'aka, istan, rodeninon," yełni.
man came-back. "Your-children, as-I-know, are-all-dead," she-says-to-him.
Dza-do-dadle'iha, rałte royidza-no-rodiletan. To-rotłoron ledo. Arurūyeł:
He-answers-not but he-cleansed-himself. After-this he-sits. And-then:
"To-deyorna to-dinina?" yełni. "Rabe rodeninon,
"What-happened-to-them whom-you-say?" he-says-to-her. "They are-all-dead,
rabeisni." Arurūyeł: "Ta-radeyortsen?" ni. Arurūyeł ko
I-say-of-them." Then: "What happened-to-them?" he-says. And then this
soltan te-deni: "Dzan notłi tlotokot tse-les'o, aruruyeł
woman says: "During-the-day riverward on-the-bank I-went, and-then

notura kor na-ralerałtł. Aru ni-nes'o, aruruyeł tuura
over-there a-rabbit was-running-across. There I-went, and-then there

nolekon kedeniledŭr. Aru tlo yi rodaraslo; eite yeł ko
blood was-scattered-about. There a-dish in I-gathered-it; it with here

no-neseyo. Eite raboro letłmats: aruruyeł anteyi ta-radeyor."
I-came-back. That for-them I-boiled: and-then it-was-that they-died."

Tseyerotse te-deni, mizeni, ko ten'a: "Me yeł ketse
And-then he-said, it-is-said, that man: "Her with wrong

rodo-roderéłtlak, totliten! Ken é? kłéro kăkă lŏkŏnă
it-has-gone-in-her-mind, this-one! What is-it? Truly an-animal's blood

nelantsen ūlĭlĕtlĕt-é-ło ko te-neł'ane?" mizeni. "Dzan tan
it-being did-you-know that which-you-used?" he-says-to-her. "That-day indeed

yutura tan raka-ka-se-keradinerérak ru! Tse ta-rabeinłlentse ei
over-there indeed I-was-struck-by-a-branch-in-that-place! And why-is-it that

rabe tse lido?" mizeni. "Ken yeł yi-raniyon, iru?
them near you-sit?" he-says-to-her. "What with have-they-grown-up, do-you-know?

To-ta'é rabe kontokot ra-no-yelilara?" Aruruyeł nŏlkĕtłă dza-niłton;
Why-is-it their shoulders you-did-not-put-it-on?" And-then a-sack she-took-out;

eite yi ko ra ye yeł yi-raniyone eite rałte ra-no-nilo.
it in the they it with grew-up that also she-put-near-the-wall.

Aruruyeł ronten yi-na-radideno. Tse yur rałtsen ra-rōleł,
And-then suddenly they-came-back-to-life. And about evening it-is-getting,

tsedeni. Arurūyeł rél'é ko ten'a ronten dza-raniyo, tsedeni: "Ledô',
it-is-said. And-then perhaps the man suddenly spoke-out, it-is-said: "She-sits,

totłiten!" tsedeni; "kaka anteit niłkŭdzaten ni-taltlete!
that-riverward-one!" he-says; "animals it-is a-short-while-ago which-nearly-died!

Ken me ko taldał, iru?" yełni. "Netur, me yel taka
What her from has-come-forth, what?" he-says-to-her. "Quick, which with up

rŏłtlŏ kararénł'o kantaye, raboro ido no-raniłnih, nor săkăihă
the-sled-braces you-prop it-seems, for-them inside bring-again, these children

kün yan yi-nił'ihna!" mizeni. Aruruyeł tłi talyo,
fire only who-see!" he-says-to-her. And-then out she-went,

keyi no-dōleniktsen. Dzan ma kala. Aruruyeł rél'é ido
having-put-on-her-mittens. The-day, she is-not-there. And-then maybe in

no-ideyo. Lerēna tonitse răłărtłĕ, me totse radetodle, nedo
she-came-again. Silver-salmon in-midstream running, its back slashed, inside

no-ilekut; tĕ-tĕn'ăkă tor yiltōtł; toruno ye tŏrŏn kał năltĕł,
she-brought; her-children to she-distributed-it; and its breast half she-cut,

eite tłītł ka ne-datłkūt, eite ye tse ni nitlak (ei to-kŭn tse).
this embers on she-put, this him to she-placed (the her-husband to).

Zesădletŭk. Zĕlĕtŭk, tse yur niłnałru mor kesaltut. To-rotlor
He-began-to-suck-it. He-sucks-it, and some long-while at-it he-sucked. There-after

rél'é yunortse ni no-yiniton to-'ot tsen. Tetłektse ło-dilta. Tuur
may-be from across he-put-it-back his-wife toward. Entirely it-is-whole. There

yenił'an, roré'on to-roko. Aruruyeł ko mĕ dŏrŏł-tłĕn
she-looks-at-it, it-has-been-eaten to-find-where. And-then this its fin-bones

lōyīt ranidetūt rōzā̃, to-rudokōtł rōzā̃. "Ken é? rén'on-łe
at-the-end-of has-been-nibbled slightly, it-is-whitish slightly. "What? did-you-eat

ko te-neł'ane?" yełni. "Ho! ras'ontse antei tetł'an,"
this which-you-had?" she-says-to-him. "Yes! I-ate-it therefore I-give-it-back,"

yełni. Tse rél'-ko tłete rorélet. Eite kodonte rałte
he-says-to-her. And then-maybe the-night passed. The (next)-morning then

an-no-salt'ots, tsedeni. Tena ade dzan roleł. Aruruyeł
he-went-hunting-again, it is-said. Us(=him) without the-day passes. And-then

yutoko kŏkŏkă-kał royi tseréran, tsedeni. Yido no-tsit'ots.
up a-fore-quarter in-the-hole we-brought, it-is-said. In we-came-again.

Tsorotadlenek. "Ko-rud'oktse to-roslila," tsedeni. "Yerotse yurru
We-gave-the-news. "That-could-be-carried I-did-not," we-say. "Thus thither

ni-sodeł lĕtsĕn," tsedeni. Rałte ketātłmāts, mizeni, ko soltan.
we-shall-go all-together," we say. And she-boiled-some, it-is-said, the woman.

Rałte yen-keré'on. Tłete rorélet. Eit kodonta rałte yurru
And they-ate. The-night passed. The (next)-morning then thither

ni-rataldatł, rabeizeni. Tseyerotsarałte yurru ni-ranidatl. Yurru
they-began-to-go, they-are-said. And-then there they-came. There

raditadletłé. Yet rotsen rałte neñkoka-murulane te-tatł'an,
they-began-to-stay. There from also things-that-are-on-earth-(game) he-began-to-catch,

mizeni, teniga. Tłŏrŭlŭkŏkă a-rultlattsen, tsedeni; tse
it-is-said, moose. The-hard-crust-time having-come, it-is-said; and

kotā̃, tłorulukoka a-rultlat. Aruruyeł ko soltan, mo-kŭn
now, the-hard-crust-time has-come. And-then the woman, her-husband

an-no-tałleyo toruno, tłĭyĕkă ledo, mizeni. Aruruyeł ronten
is-gone-on-the-hunt while, at-home stays, she-is-said. And-then suddenly

mor tseni'ots, mizeni: "Rode no'o no-kŭn
to-her we-came, she-is-said: "You-know yonder your-husband's

mu-ura titsan ără altli," mizeni. Tseyerotse rél'é
elder-brother starvation by died," we-say-to-her. And-so perhaps

taltsar, mizeni. Aruruyeł rél'é mo-kŭn no-ideyo. "Rode
she-began-to-cry, she-is-said. And-then maybe her-husband came-back. "You-know

nu-ur istan titsan ara altli," tsedeni. Aruruyeł tadle'ih,
your-elder-brother indeed starvation by died," we-say. And-then he-said "Hé!'

tsedeni. Royidza-no-rodiletan, dza do-dadle'iha toruno. To-rotłoron ronten
it-is-said. He-cleansed-himself, he-answers-not while. Thereafter suddenly

dza-raniyo, mizeni. "A! hé! to-dini tan?" mizeni. "Rode
he-spoke-out, he-is-said. "Ah! hey! what-say-you then?" he-says-to-her. "You-know

nu-ur istan titsan ara altli, mizeni," yełni ko
your-elder-brother indeed starvation by died, he-is-said," she-says-to-him this

mo-'ot. "Ken é tse to-dinitse eit yerotse rŏrŏn netsar?" yełni.
his-wife. "What is-it that you-say that this for you-cry?" he-says-to-her.

"ŏrŏtĕn tena robădză tena tlo yełkeke kāt, isi.
"Last-year (what) our aunt (mother-in-law) us to gave-to-eat he-wants, that-is-it.

Ałkéyar ra-no-to-tseneltaih: to-rotonił? to-rōletsŏre
Under-the-shelter-of-trees we-have-our-backs-leaning: what-shall-we-do? what-an-amount

yi-tsi'ihtse nŏrŏn! Orotse rōnit me yeł ketse rodo-roderéłtlak,
we-eat here-now! This on-account-of her with wrong it-has-gone-in-her-mind,

to-tłiten!" mizeni. "Sakaih yokalayu kél-diłtana yar
that-riverward-one!" he-says-to-her. "Children poor-dear one-together in-the-house

dadletłéten, yŏ rŏ suu atsar-é totłiten!" Tseyerotse rél'é
they-stay-where, him for perhaps she-cries, that-riverward-one!" And-then maybe

yet rałte tu ka rarédak, rabeizeni. Tseyerotse rałte midoy
then too water for they-waited, they-are-said. And-then also canoes

yi-iron, rabeizeni; tseyerotsarałte dza rataldatł, tse yutłi
they-made, they-are-said; and-then-also out they-started, and at-the-main-river

rałte dza ranidatł, rabeizeni. Aruruyeł mĕ-lĕnyū yet dadletłé,
then out they-came, they-are-said. And-then his-brothers-in-law there are-staying,

me nŏtĕbă; tseyerotse rél'é na-rataldatł. Tłi-to ronidzet
him waiting-for; and-then probably they-(all)-started. (To) straight-water middle

ranidatł, tseyerotse rakał, rabeizeni. Aruruyeł rél'é ro
they-came, and-so they-paddle, they-are-said. And-then perhaps a (his)

kŏkĕn talrŭk, mizeni. "Se kŏkĕnă tar tso rodŭrŭdărăł!"
shoulder was-cramped, he-is-said. "My shoulder the-bottom toward must-throw-itself!"

Arurūyeł yudotse dinatłkōtł, tu yit tso rokedōletlĕt, tsedeni.
And-them from-below it-began-to-blow, water in to the-wind-struck, it-is-said.

Tseyerotse rél'é zĭtă, tōt lăkă dza nikan, mizeni. Tseyerotse
And-then maybe hardly, waves between, out he-canoed, he-is-said. And-so

ni-ro nikan. Te-ten'a kéłoken tsei yi atłdo. Rŏłtĕmĕts, mizeninen.
to-land he-canoed. His-son one the-boat in he-has. Broadsled, who-is-called.

Eit rałte nolăya no-rétkok. Tseyerotse ko te-ten'a Rołtemets rałte ro
There then a-salmon he-put-to-roast. And-then this his-son Broadsled also to

ni-niłtan. "Rołtemets!" mizeni, "todoo ko-tərasakak," mizeni.
he-placed. "Broadsled!" he-says-to-him, "below I-shall-canoe," he-said-to-him.

Aruruyeł ko Rołtemets te-deni: "É'é, to-medini," yełni. Tseyerotse
And-then this Broadsled says: "Yes, as-you-say," he-says-to-him. And-so

yudoo ni-ko nikan, mizeni. Yudoo rakał, mizeni. Arurūyeł
downstream off he-paddled, he-is-said. Downstream, he-goes, he-is-said. And-then

yudoo ronten mo-'ot tŏ-nĕlărĕ ūtŭn, mizeni. Yor ni-nikan, mizeni.
down suddenly his-wife a-snag holds, she-is-said. To-her he-paddled, he-is-said.

Arurūyeł: "Nĕtŭră; kedo-seterélłtal to-roron!" yełni ko mo-'ot.
And-then: "Thank-you; you-will-save-me in-order-that!" says-to-him this his-wife.

Aruruyeł mor ni-tsokał toruno te-mizeni: "Rŏdĕ nă'ă ye-no-rodōt'ane,
And-then to-her we-paddle while we-say-to-her: "That my-mother used-to-see-which,

tĭtsĕză ātĕ rātăt ŏkō talĭnīkte łe te-dini?" mizeni.
always perhaps for you-having-worked is-it-that you-say?" we-say-to-her.

"Eite zō-łe neñkoka tolōł! Tłă răde ko kedo-siłtaih,"
"Those indeed on-earth will-be-many! Delay without now save-me,'

mizeni. Ku yurru mo ron na-kana-tsodetlihtłtsen: "Rode na'a
we-say-to-him. Again there her to addressing-again-our-words: "That my-mother

ye-no-rodot'ane, nŏmās zŏkŏł ate rata oko talinik-é?"
used-to-see-which, the-round-knife at-least always perhaps for did-you-work?"

mizeni. "Eite zo-łe neñkoka toloł," ni, mizeni.
we-say-to-her. "Those indeed on-earth will-be-many," she-says, she-is-said.

Ku yurru mor na-kana-tsodetlihtł, mizeni: "Rode na'a
Again there to-her readdressing-our-words, we-say-to-her: "That my-mother

ye-no-rodot'ane, łĭtsăă zokoł ate rata oko talinik é?" mizeni.
used-to-see-which, the-bitch at-least always perhaps for did-you-work?" we-say-to-her.

"Eite zo-łe neñkoka toloł," ni. "Tse ku to-dini ără?"
"Those indeed on-earth will-be-many," she-says. "And again what-nonsense-you-talk?'

mizeni. Tse mo rŏn lo-tsărădădlĕrăł. Aruruyeł yudoo taka
we-say-to-her. And her to we-struck-the-hand. And-then down-river up

no-kĕih-lărăł, kădĕyŏr. "Ken-'a?" tsedeni; "na'a
a-birch-log-bobbing, she-became-like. "What-is-it?" we-say; "my-mother

ye-no-rodot'ane oko talniken rél'é nor te-deninen-é?" Ra-no-tsidakan,
used-to-see-which for one-who-worked perhaps that one-who-speaks?" Up-we-canoed-back,

tsedeni, eit rotłoron. Ko yune'u ro-ten'a ro no-tsidakan, tsedeni.
it-is-said, there after. There up-above our-son to we-canoed-back, it-is-said.

Aruruyeł: "Rołtemets!" mizeni; "yunła-yune'u ne-l'ayu rabor
And-then: "Broadsled!" we-say-to-him; "landwards-above your-uncles to-them

ne-ne'oih-a?" mizeni; "nedator karadela tso-roko," mizeni.
will-you-go?" we-say-to-him; "to-what-purpose they-sing to-find-out," we-say-to-him.

Rałte yunła-yuni rotsen dza-răleyăr, ĭtłăk, tsa-rar'ana. Rołtemets
For inland-above from they-dance, it-is-heard, on-account-of-which. Broadsled

yunła-yune'u talyo, tsedeni. Yunła-yunit ror-ni niyo, mizeni.
inland-above went, he-is-said. Inland-above to-them he-came, he-is-said.

"Rode ne-to?" rayełni ko me-l'ayu. "Nodoo ista ledo,"
"Where-is your-father?" they-ask-him these his-uncles. "Down-here I-know he-is,"

yełni. Ra ye noroł kederéli, rabeizeni. Tseyerotse yudo
he-said-of-him. They him in-presence-of sang, they-are-said. And-then down

no-tałleyo, te-to tsen, mizeni, ko Rołtemets. Ko yudoo te-to
he-started-back, his-father to, he-is-said, the Broadsled. There below his-father

ro no-ideyo, mizeni. "Roltemets!" mizeni, "ne-l'ayu nedator
to he-came-back, he-is-said. "Broadsled!" we-say-to-him, "your-uncles to-what-purpose

karadela?" mizeni. "Se-l'a kéłoken, ode istan: 'Mĕn-łă-răl̆ezăk
sing-they?" we-say-to-him. "My-uncle one, he I-know: 'Soft-to-the-touch

kantaye tena katse yi-rétłkek,' mizeni." Aruruyeł ko me-to
a-thing-like us upon she-did-put,' we-say-of-her." And-then the his-father

ronten te-deni, mizeni: "Ken é? nĕdōdŏn ko ta-raradeni?"
sharply says, he-is-said: "What is-it? when (was) this which-they-say?"

mizeni. "Kélte royan nĕka-kō-tān tłēyŭk kantaye yi
he-said-to-him. "Once only long-ago birch-cradle a-thing-like in

tłé-setseréłtlih! Nelo rătānen ło kū eit!" mizeni.
we-did-put-my-head! Manual-skill one-who-had is-that also there!" he-says-to-him.

"Se-l'a kĕłŏkĕn rałte, ni: 'Yurru nĕdōdŏnyĕ ara dza-no-tenaréłdar,
"My-uncle one other, he-says: 'Some-kind-of-old-thing with we-surprised-us,

ka-te-tenaréł'an.'" Aruruyeł ko me-to te-deni: "Orotse rŏzŏ rél'é
as-it-were.'" And-then the his-father says: "Thus indeed perhaps

ta-rayełni 'é," mizeni. "Tła nonła rabor ne-taras'oł," tsedeni.
they-say-of-her is-it," we-say-to-him. "Wait over-yonder to-them I-shall-go," we-say.

Yunła-yune'u sal'ots, tsedeni. Yunła-yune'u tseni'ots, tsedeni.
Inland-above we-started, it-is-said. Inland-above we-came, it-is-said.

"Se-lenyu, se noroł kedorli," rabeizeni. Karadetaltli.
"My-brothers-in-law, me in-presence-of sing," we-say-to-them. They-began-to-sing.

Aruruyeł kōt nelo roni-rodăd'onten eit ra-zesăltli. Aruruyeł:
And-then there manual-skill her-possessing there they-sang. And-then:

"Se-lenyu, tła sūlălŏrłtłŏn," tsedeni; "ken é nedodon nelo
"My-brothers-in-law, a-while listen-to-me," we-say; "what is when manual-skill

ratan?" mizeni. "Kélte royan neka-ko-tan kłéyuk kantaye yi
had-she?" we-say-of-her. "Once only a-long-time-ago birch-cradle a-thing-like in

tłé-setseréłtlih, ei ko kerélkut me-dorninen. Orotse rozo rél'é
she-put-my-head, the one was-saving whom-you-say. Thus indeed probably

te-medorni'é?" mizeni. "Se-lenyu, nodoo ni-ro neskan,
are-you-saying-of-her?" we-say-of-her. "My-brothers-in-law, here-below to-land I-canoed,

tseyerotse nodoo kél yoza-késa ro rodetłkon toruno nodoo ni-ko
and-then there the-boy small-dear to I-built-a-fire while downstream off

neskan. Tse nodoo raskał, aruruyeł yudoo so-'ot to-nelare utŭn.
I-paddled. And downstream I-go, and-then down my-wife a-snag holds.

Tse mor ni-neskan. Aruruyeł so-'ot te-selni," mizeni, "'Nĕtŭră,
And to-her I-paddled. And-then my-wife says-to-me," we-say-of-her: "'Good,

kedo- seteréłtał to-roron!' selni. Mor ni-raskał toruno
you-will save-me in-order-that!' she-says-to-me. To-her I-paddle while

te-misni: 'Rode na'a ye-no-rodot'ane, titseza zokoł, ate rata
I-say-to-her: 'That my-mother used-to-see-which, at-least, always perhaps

oko talinikte ło te-dini?' misni. Aruruyeł so-'ot te-sełni:
for having-worked is-it that-you-say?' I-say-to-her. And-then my-wife says-to-me:

'Eite zo-łon neñkoka toloł,' sełni," mizeni. "Yurru
'Those indeed on-earth will-be-many,' she-says-to-me," we-say-of-her. "There

mor no-kana-rasetlihtłtsen: 'Rode na'a ye-no-rodot'ane, nomas
to-her addressing-again-my-words: 'That my-mother used-to-see-which, the-round-knife

oko talinikte ło te-dini?' misni. 'Eite zo-ło neñkoka
for having-worked is-it-that you-say?' I-say-to-her. 'Those indeed on-earth

toloł,' sełni," mizeni. "Yurru kun mor no-kana-rasetlihtłtsen:
will-be-many,' she-says, we-say-of-her. "There again to-her addressing-my-words-again:
(to-me)

'Rode na'a ye-no-rodot'ane, łitsaa zokoł, ate ratat oko talinikte
'That my-mother used-to-see-which, the-bitch even, always perhaps for having-worked

ło te-dini?' misni. 'Eite zo-ło nenkoka toloł. Netur
is-it-that you-say?' I-say-to-her. 'Those indeed on-earth will-be-many. Quick,

tła raden ko kedo-siłtaih,' sełni. 'Tse ku to-dini ara?'
delay without now save-me,' she-says-to-me, 'And again what-nonsense-you-talk?'

misnitsen mor ła-radalegarał. Aruruyeł so-'ot yudoo nětsōlăyă
saying-to-her to-her I-hit-the-hand. And-then my-wife down a-water-weed

ko-ĭlĭn kădĕyŏr." Rodo-kezeréon: "So-'ot kětsăn tor
carried-by-the-stream became-like." He-began-to-sing: "My-wife the-grass among

serełta kă te-serełlin," tsedenitsen. Kezesaltli; aruruyeł ko me-len
put-me as it-were," saying. He-sang; and-then the his-brother-in-law

răr̆ătăka kětłŏkŭn tadleyĕł; eite ara ye tłé kedenerełrał, tseyerotse
middle-one an-ember seized; this with his head he-hit, and-thus

dikon. Tse nonłet ka dădŏkŏn. Aruruyeł ronten ałkéyar-to-ledoya
he-caught-fire. And inland he-burnt-to-ashes. And-then suddenly an-owl

kŭn yi tsen dza denăl̆ĕnĕn. Eite noneka nuyit denolenen. Tseyerotsen
the-fire in from out came. This inland in-the-bush went. And-so

yudoo rataldatł, ko ratőza, Rołtemets, tsen. Aruruyeł yudoo
downstream they-started, the their-nephew, Broadsled toward. And-then down-there

ronten kĕdzăr̆kă dza no-netor. Eite ko kün tsen mo-roni-kōle'oye
suddenly a-camp-robber out flew. This the fire near put-to-roast-on-a-stick

nolāya t'āł mĕdă niłkootset na-a'ih; tseyerotse ra yor ni-nidatł:
salmon roasted belly whole was-eating; and-so they to-him came:

"ŏnĕ!" rayełni, iru; noneka tĭkŏ no-natok. Aru ra ya
"Come!" they-say-to-him, in-vain; inland to-the-woods he-flew. Then they him

ka tiko nidatł. Ka-rayenałledātł: rabe kootse kětsă'ăn
after in-the-woods went. They-chased-it-about: them ahead-of here-and-there

ne-yenetok. Ra ya ka ko-idedał, nonekā; ra ya ka ał
he-flies. They him after go-about, far-inland; they him after spruce

nuyit nałledatł. Tseyerotse rabe yeł ketse no-rodenadlenen, aruruyeł
among wandered. And-so them with wrong the-head-went, and-then

korōlerōn, ŏrōdĕ kŏr. Roih ron nekŭts.
they-became-beasts, they too. Winter a-part-of is-short.

The Owl.

A husband and his wife were living together, with their children. The man was a hunter: this was his main occupation, and once, when he was away on the hunt, his wife was at home sewing. She went out, and walking the top of the high bank, she looked exploringly up and down the Yukon. Then she descried a rabbit which was running across the river. There was something black on his back, just above his fore-legs, and then the woman broke wind, upon which the black thing fell from the rabbit's back. She went back into the house, and having dressed herself up, she went to the place where this had happened. There she found clotted blood scattered all over. This she gathered into a dish and brought back to the house. She boiled it and fed her children with it, and before the night had passed all the children died. Then she dressed the bodies and laid them along the wall, reclining against it. And she wept.

After the day had nearly passed, the husband returned, and she said to him: "Your children, alas! are all dead." He answered not a word, but he washed and cleansed himself and then he sat and said: "What were you saying about them?" She replied: "I said that they are all dead." "How did it happen?" said he. Then she told him: "I walked to the top of the bank," said she, "and saw a rabbit crossing the river; I went to the place and found clots of blood scattered about; I gathered them in a dish, brought them into the house, and boiled them for the children: that is how they died." Then the man exclaimed: "Oh! this woman is really getting crazy! How did you know that it was really an animal's blood, to make that use of it? At that very time I was struck in the face by a branch. And now why do you stay by them, doing nothing? With what have they been brought up? Why did you not put it on their backs?" Then she took a sack, and produced from it the collars with which they had been brought up, and put them on the bodies near the wall. And, suddenly, they all came back to life.

The evening came. The husband suddenly broke the silence and said: "Oh! the lazy one! wouldn't you think that those who were so near to their death, a short while ago, are but common beasts? what sort of beings did she give birth to? Hurry up, and bring in for them the things which you hide so carefully that you seem to use them as props for the sled-benches. Those poor children never see anything (of the cooking) but the fire!" Then she put on her mittens and went out, for a long while. When she came back she brought a silver-salmon that had been caught in midstream, and had been carefully cut all along the back before being dried. This she cut into pieces, which she gave to the children, reserving one side of the breast, which she put on the embers and then gave to her husband. He began to nibble at it, again and again. He nibbled for a long while, and then gave it back to her. It appeared as if it had not been touched. She examined it, trying to find the trace of a bite on it: there was only the tip of the fin, that had a whitish appearance; it had been very slightly nibbled at. "Have you

eaten any of this, that you hand it back to me?" she said. "Yes," he answered, "I ate before returning it to you." And so the night passed.

On the following morning, he went off again for the hunt. He was away the whole day. In the evening he came, and through the opening at the top of the house he let down a front quarter of deer. Then he entered and told about his success. "I had too much to be able to carry it all," said he. "We shall all go to the place where you left it," they said. And the woman boiled the meat, and they all ate. The night passed, and in the morning they started, and they came to the place, and they camped there.

From this camp he used to go, as from his former place, for hunting trips, hunting moose. The spring came, and it was the time of the hard snow-crust. One day that he was out as usual and his wife at home, some one came to her in the house and told her: "Your husband's elder brother has died of starvation." At this intelligence, she began to cry. When her husband came back, she said to him: "I heard to-day that your elder brother has died of starvation." He simply muttered: "Hey!" and without saying more he proceeded to change his clothes and cleanse himself. Then he spoke and said: "Ah! hey! what did you say?" and she said again: "Your elder brother is said to have died of starvation." "Oh!" said he, "and what is the use of your crying over it? Evidently he did not receive any food from our aunt, as we did last year. As for us, here we are, sitting in the shadow of the spruce-trees, leaning our backs against them: what should we be doing? We have too much to eat, and that is why this woman is becoming crazy and talking nonsense. Why does she cry about him, when we are living well with our dear little ones?"

There, they waited for the river to break, and having built their canoes, they floated downstream to the main river. There he found his brothers-in-law, who were waiting for him, and all together, they started. They were floating down in mid-stream, paddling along, when suddenly he felt a cramp in the muscles of his shoulder, and explained: "Oh! my shoulder must get into the water!" As he said this, a sudden gale struck them, blowing upstream and raising high waves on the river. With great difficulty he made his way, between the waves as in a narrow pass, and came to land. There he built a fire, and put a salmon before it, to roast on a stick. He had one of his boys in the canoe with him, who was called Broadsled. He gave him the fish to eat, and said to him: "Broadsled, while you stay here I will go down in my canoe and take a look around." "All right," answered the boy, "do as you say." And the man paddled off and started downstream. And after he had gone some distance, he beheld his wife in the water, holding fast to a snag. He paddled towards her: "Good!" she exclaimed, "you come to my rescue!" But, as he was paddling in her direction, he addressed her, saying: "The 'titseza' which my mother had always her eyes on, did you ever do much work on them, that you speak so confidently?" "Bah!" she said, "there will always be plenty of those on the earth. Delay not, and rescue me!" But again addressing her, he said: "And the round knife, which my mother never lost

sight of, did you do much work with it?" She replied: "Oh! but there will always be enough of those on this earth." And again he addressed her and said: "And the bitch, of which my mother was so careful, did you take much interest in it?"—"But," said she, "there will always be enough of those on this earth." "Is this your only answer?" he said, and he hit her hands with a stick and she let go of the snag, and down she went with the stream, bobbing up at times above the water, as a birch log drifting down. "What of it?" he said, "was she one to mind those things of which my mother took such a great care?"

After this he canoed back up to the place where he had left his boy. His brothers-in-law had landed further up, in a bend. He called to the boy: "Broadsled!" said he, "will you go up there, and find out what your uncles are singing?" For the echoes of a mourning celebration were coming down to them, from the camp above. So Broadsled went, and he came to the place where his uncles were, and they asked him: "Where is your father?"—"Down here, at a short distance," he said. And he heard their songs and went back to his father. He asked the boy: "Broadsled," said he, "what is the burden of your uncles' songs?" The boy answered: "One of them sings: 'Oh! the fine, glossy, soft parkies, which she used to make!' thus he sings." "What!" exclaimed his father, "do they say such a thing? She never made me but one parkie, a long time ago, and when she put my head into it, it was like a birch-bark cradle. And they praise her for her skill!" "Another of my uncles," the boy continued, "is singing: 'How often she surprised us by producing the food which she had kept so long in the cache that it had been forgotten!'" "This sounds better," said his father. "Wait a while, I shall go to see them," and he went. Having come to their camp he said: "My brothers-in-law, let me hear your songs." And they sang. They sang of her handiwork and her skill. And he said: "My brothers-in-law, hear me a moment. Why! she wasn't skilled in the work at all. Once only, and that a long time ago, she made a parkie for me, and when I put my head into it, why! it was like getting into a birch-bark cradle! But you are right when you say that she was very saving. My brothers-in-law," he continued, "down here, at a short distance, I landed, and having built a fire for my dear little boy, I canoed further down, and found my wife, in the water, holding fast to a snag. 'Good!' she said, when she saw me coming, 'you come to rescue me.' Drawing nearer, I said to her: 'Did you ever work much for the "titseza" of which my mother was so careful? Why do you speak so confidently?' and she said: 'But there will always be enough of those on this earth!' Again I addressed her and said: 'And the round knife which my mother never lost sight of, did you work much with it?' She replied: 'But there will always be enough of those on the earth!' And again I addressed her and said: 'At least the bitch, which my mother always kept an eye on, did you take great care of it?' She answered: 'But of those also there will always be enough on earth. Delay not, and rescue me.' I said: 'Is this your only answer?' Whereupon I struck her hands with a stick, and she lost her hold, and floated down as a water-weed that has been pulled off its roots." And then he began his own song: "My wife has

left me to lie on the grass!" But as he sang, the second of his brothers-in-law grabbed a burning stick from the fire and hit him on the head with it, and the man began to burn. There, in the brush, he burnt to ashes, and from the smouldering embers a small owl flew out, towards the woods, in the underbrush he flew. But they went down to the place where was their nephew, Broadsled. Oh! wonder! there was only a camp-robber, picking at the belly of salmon which was roasting on a stick by the fire: he flew away as they came. They went after him, calling him, but he wouldn't come. They followed after him in the woods, and chased him about, but he evaded their pursuit. Farther and farther in the woods they went, and they lost their way. Their heads went swimming, they were dizzied, and they too were changed into animals. A part of the winter is become short.

NOTES.

"ałkēyar to-ledōye," lit. the thing that perches on the lower branches of the spruce. The term is applied to a small species of owl, hardly more than eight inches in height. This bird is supposed to possess preternatural powers, and anyone who would attempt to kill it, would run the risk of his own life, according to the Ten'a belief. They propitiate him by greasing his tail, as he is easily approached in the day-time.

"rabe-ten'aka rulan," their children there are, *i.e.*, they have children.

"mizeni," it is said, lit. we say of him, the first person plural in its indefinite meaning. The ever occurring forms: "mizeni, tsedeni," etc., are especially characteristic of the extreme lower dialect, where they are used three or four times in every narrative sentence. As will be noticed, they are frequent also in the lower dialect as shown in these stories.

"te-tan tsarałte an no-ted'oih," he does and he hunts; or, perhaps better: "te-tantse rałte an no ted'oih," and he, doing, hunts. The meaning is that "his occupation is to hunt."

"kū," again, for "kūn." A lower dialect form, occasionally also used in the upper language.

"ko mo-'ot rałte," but his wife, on the other hand his wife. . . . In such constructions, "rałte" simply denotes an opposition between the clauses, as here: he hunts, but his wife does something else.

"Yūkŏnă," the Yukon. This is the only instance in which I heard the word in a merely Indian context; it seems to be a Ten'a word, signifying the main river.

"rél'é," is used in the lower dialect with a very undetermined meaning, and can be generally omitted in the translation.

"tānāna," in upper dialect: "tonāna."

"tsedeni," see above, the note on "mizeni."

"mo kōntŏkŏt," his shoulders. "Kontokot" is properly the space between the shoulder blades.

"kedāɬlĕtɬĕts," a black thing is, lit. something is black.

"nōlekōna," a lower dialect form of "lokōna," blood.

"tlŏ," for "tlok," dish.

"yitɬmāts," she boiled it, the lower form of "yitɬbats."

"te-ten'aka eina raɬte tor yiletlo," her children to them she gave it around. The repetition of the pronoun "eina" after the noun is a turn of the lower dialect; an upper speaker would say: "te-ten'aka raɬte tor yiletlo," and she gave it to her children. Most of the lower speakers would have used "oina" for "eina," but the narrator had been among the upper tribe, and had lost this peculiarity, which is ridiculed by the upper speakers.

"tɬedŏ," for "tɬete," night.

"īstān," the lower dialect form; the upper dialect uses "tāsĭ." Both are formed of the same two words "ĭsĭ," indeed, here (Latin: *en, ecce*), and "tān," to my knowledge. In the lower form we have "isi-tan," becoming "istan"; and in the upper form "tan-isi," becoming "tasi." The words imply that the speaker is sure of what he says.

"royidza-no-rodiletan," he cleansed himself, *i.e.*, he changed his clothes.

"me yeɬ ketse rodo-roderéɬtlak," it has gone wrong with her in her mind, lit. in her speech ("do"). The speech is sometimes used to signify the mind, of which it is supposed to be a picture. The expression is proper to the lower dialect, in which the root "tlar," "tlak," can be substituted for many others in expressions of contempt.

"totɬiten," the one on the river side. He alludes either to the fact that the wife commonly sits on the river side of her husband, or to the casual position which she now occupies. If he means the first, the expression is familiar, but it is offensive if he means the second, because it implies a shade of contempt and disregard.

"raka ka se-keradinerérak," a very obscure phrase, explained by the narrator as meaning: "a branch struck me in the face," which is an evil omen.

"ta-rabēinɬlĕn," lit. what do you abstain from doing to them? The verb "tetɬlen" expresses the not doing something to some one, the not acting on the object when you would be expected to act.

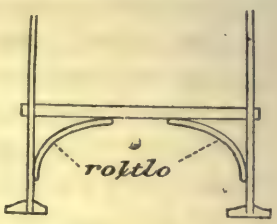
"mizeni," lit. we say to her. The first person plural, in its undetermined meaning, used for the third singular. This is quite common in the lower dialect, and the remark need not be repeated in the future instances which we shall meet.

"ra-no-yelīlāra," the word contains no other allusion to collars or necklaces than the being placed around ("ra-no,") but the preceding "rabe kontokot," on their shoulders, completes the meaning.

"ledô'," she stays (idle), with a strong emphatic drawl on the "o." He gives a scolding to his wife. The first sentence, which is properly the scolding, is in the third person, for when a Ten'a scolds he never addresses the person directly, but speak of her or him in the third person. Even parents scolding their children observe this rule of etiquette.

"ni tāltlĕte," which died. The verb "ni neslit," which properly means "to come to a stop," is used for "to die," but the phrase is proper to the upper dialect and it is strange that it should occur here. One might infer that the expression was formerly common to both dialects.

"me yeł taka rŏłtlŏ kararénł'o kāntāye," the things with which you seem to prop the bottom braces of the sled, *i.e.*, the food which you keep so well concealed. He reproaches her for keeping the food hidden and not giving it to the children. The "roltlo" were curved braces, which, in the old-time sleds, were lashed to the stanchions at their lower end, and to the benches of the frame, at their upper end. They are no more in use now. Being practically hidden from sight, they are taken here, as a term of comparison, to imply that the food alluded to is even more concealed.



"kŭn yan yi-nīł'ihna," who see only the fire, viz., there being no food cooking on it.

"dzān," the day, viz., the remaining part of the day.

"lerĕna," silver-salmon, a lower-dialect word. The fish is here described as having been caught in midstream ("to-nidze") or, perhaps, above the place ("tonitse,") and dried. To dry the silver-salmon the natives make in the flesh of the back a series of parallel cuts, obliquely to the middle-line. These cuts are a proof that the fish has much flesh, otherwise they would be to no purpose. Their mention here shows that the fish she brought was large and good.

"nāltēł," she cut, a lower form, for "naltŭł."

"zesādletŭk," for "sadletŭk." The lower dialect only presents in a few cases a reduplication of the first syllable in past tenses. It may be compared to the Greek λε in λελυκα, but is quite exceptional.

"rorĕ'on," the first person plural, in its indefinite meaning, but here with the pronoun "ro" instead of "tse."

"rōza," the lower dialect form, for "royoza."

"ło," denotes mere interrogation.

"kŏkōkă kał," a front quarter, lit., a half of the ribs.

"royi tserĕran," we (he) brought in the hole; the underground house being often designated as "the hole."

"ko rŭd'oktse to-roslila," I did not get what could be carried, *i.e.*, I got what could not be carried, I got such a quantity that I could not carry it.

"tłŏrŭlŭ kōka," on the hard crust, and, by extension, the time of the hard crust *i.e.*, the latter part of spring, the last week of April and the first in May. At this time the snow thaws during the day, and, if the sky is clear, freezes at night, the top surface hardening into a crust on which one can walk without breaking through for six or eight hours of the morning. This hard crust is called in lower dialect "tłorulu," in upper dialect "tłérulu."

"to-rōletsŏre," what a large quantity. The lower dialect form of "to-rolekore";

the extreme lower dialect would have, as well as the extreme upper one: "to-roletchore."

"rōnīt," the lower dialect, for "rărănīt."

"tu ka rarĕdak," wishing (waiting) for water they spent the time, *i.e.*, they remained until the breaking of the river. The phrase belongs to the lower dialect; the same in the upper dialect would be expressed as "they went in a boat," even if they did not move from their place.

"me-lĕnyu," his brothers-in-law, viz., his wife's brothers.

"ro kōkĕn," a shoulder, lit. our shoulder. The pronoun of the first person plural seems to have been formerly "ro," which is still found occasionally, though commonly replaced by "tena." The cramp in his shoulder is a foreboding of the impending misfortune.

"tōt lāka," between the waves, lit., "(in) the throat of the waves."

"Rŏłtĕmĕts," Broadsled, the name is ridiculous, and always provokes the laugh of the audience.

"nolāya," the lower form for "nulara," salmon, the *Oncorhyncus nerka*, of naturalists, or Blueback salmon.

"to-nelāre," a snag. The river current undermining the soft banks causes them to cave in, and large pieces, bearing trees, slide down into the water. There the trees remain standing, until their roots are washed from the surrounding soil and the current turns them adrift. The word "to-nelare" applies to these trees, standing half-submerged in the water.

"Rōde na'a ye-no-rodōt'āne," etc. He reproaches her for her carelessness and laziness, by contrasting it with the painstaking watchfulness of his own mother. However, the objects mentioned generally provoke laughter among the hearers.

"nă'ă," lower dialect for "ina'a," mamma. A Ten'a never uses the words "se-to," my father, "son," my mother, but always "ita'a, ina'a" (in lower dialect also "ta'a, na'a"), papa, mamma.

"tītsĕză." Neither the narrator nor any other whom I consulted could give me the meaning of this word. It may be an old term, altogether lost in the actual language.

"ate rātāt," always perhaps. The phrase is used in lower dialect as an interrogative adverb, when a negative reply is expected, as in Latin *num, numquid.*

"eite zo," those indeed, *i.e.*, as for those.

"tła răde," without delay, lit., "without by-and-by."

"nōmăs," same as "tłabas" (in lower dialect "tłamas"), semi-circular knife.

"zōkŏł," at least, not even.

"taka no-kéih-lărăł," a birch log bobs up. The birch is heavy, and when drifting in the current, sinks and disappears at intervals, and then comes up again.

"ken'a?" what is it? viz., it is not much of a loss. This rejoicing or not grieving at his wife's death is most unnatural to a Ten'a, but it must be remembered that the hero of the tale is nothing but an owl. There is, even, a vague notion

among the Ten'a that he was changed to an owl on account of his heartless conduct towards his wife. This is plain enough from the conclusion of the story.

" nedātor kărădĕlă," what is the burden of their songs. He hears them sing, and as this implies mourning, he naturally infers that they are mourning for his wife, their sister, whom they suppose to have perished in the storm, they themselves, as well as the hero, having presumably had a narrow escape. He wishes to know whether they give her much praise, and how they would feel if he disclosed to them his participation in the death of his wife.

" mĕn-lă-rălĕzăk," on it the hand slides smoothly. The parkie being the main part of the Ten'a attire, this is supposed to qualify the nice ones which she made for her husband and children.

" neka kō tān," an expression explained by the narrator as meaning: " long ago."

" tłéyŭk," a birch cradle. He disagrees with the quoted statement of his brother-in-law, and says that not often, but once only, did his wife give him a parkie, and this far from being smooth and supple, was as stiff as a birch-bark cradle. The birch-bark cradle used by other North American tribes seems to have been in use formerly among the Ten'a, but the custom has altogether disappeared, and now the tłéyŭk is only a hod.

" yurru nedodōnye ără dza-no-tenārĕłdar," she surprised us with all kinds of old things. This alludes to her sparing propensities, for which we have heard her husband reproaching her, and means that she hid and kept the food so that when she brought it out its existence had been forgotten, and all were surprised to see it. This the husband approves, and from it he conjectures that he may venture to tell them what has happened without incurring their indignation.

" ra-zesāltli." The reduplication of the first syllable in the verb has already been noticed in " zesadletŭk."

" se-lĕnyu," etc. He tries, in Ten'a fashion, to gain them over to his opinion.

" so-'ot ketsān tor serĕłta," my wife has laid me down in the grass, has caused me to lie down in the grass, viz., either because of the grief which I feel and for which I lament lying down in the grass; or, because of her carelessness which left me unprovided, as a vagrant without a home. The phrase is ambiguous, and he means it to be so.

" kezesāltli," with the reduplication of the first syllable of the verb, as above in " razesaltli " and " zesadletŭk."

" me-lĕn rărătăkă," his middle brother-in-law, viz., not the eldest, nor the youngest.

" kĕtłŏkŭn," a burning ember, in the lower dialect; but in the upper language the same word means a head of dried fish.

" kedzărka," the lower dialect word; in the upper dialect " zorka." The bird remains in Alaska during winter, and comes around the dwellings and camps to get the leavings of food which he can find; hence the whites named him: camp-robber.

"korōlerōn," they became or were made things ("ke"), *i.e.*, animals, irrational beings.

"orōdé," lower dialect for "aradé."

"roĭh rōn nekūts," a part of the winter is short. Such is the conclusion in the lower dialect stories: the root "kūts" being that of "eskūdza," to be small or short.

The story, as given above, was obtained from Peter Ruyolé, a native of Nełenorodal'oten, a village now abandoned, on the Yukon River, two miles below Nulato. He is considered as one of the best story-tellers among the lower tribes, and never fails to excite the laughter of his audience. He took great pains to give me the text as intelligibly as possible. After writing it down I read it to Ruyolé's wife, Margaret Unuk, and was assured by her that every word was correct. I had several occasions to read the story to natives afterwards, and always found that they understood it perfectly.

Yŏrtsĭh.

The Raven.

Nił-tsukalayu ledo. Tseyerotse kōt tłi na-ad'oih, ko
A-grandmother-and-grandson stay. And-so now out he-goes, the

me-koya. Aruruyeł rél'é yunotsen ronten kaka ra'oł. Ruyeł
her-grandson. And-then perhaps over-across suddenly a-bear is-walking. Then

rél'é ido no-ideyo. Ruyeł rél'é te-deni: "Tsukał," ni, "tonotsen
perhaps in he-went-back. Then perhaps he-says: "Granny," he-said, "here-across

kaka ra'ol," ni. Yiłdartsen, roĭhtsĕn. Tseyerotse kōt tłi
a-bear is-walking," he-says. The-ice-is-running, in-the-fall. And-so now out

niyo ko yĕnŏrūłlĕtĕn. Ruyeł rél'é te-deni: "So-kūn terélał
she-went the old-hag. Then perhaps she-says: "My-husband thou-may-be

to-roron, no-tibaih!" ni. Tseyerotse rél'é no-talban.
in-order-that, swim-across!" she-says. And-so maybe he-started-to-swim-across.

Toruno rél'é ido no-ideyo, ko yenorułleten. Tseyerotse te tlōtł
Meanwhile maybe in she-went-again, the old-hag. And-so her waist-front

dŏnă mĕlăzōn leł no-datłkōn. Tseyerotsarałte ni-ro niban.
on an-otter skin she-sewed. And-so-then to-land he-swam.

Tā-ĭdĕtĕn. Tseyerotse rél'é yor noko diyo.
He-was-water-frozen. And-so I-guess to-him down-the-bank she-went.

Tseyerotse rél'é yo rŏyŏ tłé ulenik, tseyerotse to-no-yidletan.
And-then I guess his head's hair she-caught, and-then she-brought-him-up.

Tseyerotse rél'é ko yar rél'é rałte nedo yetatłtan. Eite
And-then I-guess the house may-be and into she-began-to-bring-him. There

rałte łał-toyéka mor rukūdza. Tseyerotse rél'é bĕkĕltłălă
though the-underground-entrance for-him was-too-small. And-so I-guess an-axe

ăr̆ă yurru ro-ronitłatł. Tseyerotse rél'é nedo yiniłtan. Orotse
with there she-chopped. And-thus I-guess inside she-brought-him. Thus

rél'é kětsăłtłūn ye yar ni-niłkuł. Tseyerotse tłe roderélo
maybe a-straw-mat him under she-placed. And-so in-the-fire she-put-wood

nonła tłakat. Toruno rałte ko me-koya itenadlekět rél'é.
in-the-centre fire-place. Meanwhile though the her-grandson began-to-fear I-guess.

Tseyerotse te-deni: "Tsukala no-ketadlerén," ni. "Tŭ,
And-so he-says: "Grandmother is-thawing-the-meat," he-says. "What,

ketłkōs toruno, tsĕlūłr̆ăł!" yełni. Tseyerotse eite rél'é
he-is-stiff while, let-us-kill-him!" he-said-about-him. And-so then perhaps

te-yełni ko me-tsukala: "Tĭděnă!" Tseyerotse kot te-yełni:
she-said-to-him the his-grandmother: "Nix!" And-so now she-says-to-him:

"Yakan kā, san-tor noro kō yoza ruronen
"That-person without, during-summer for-you arrows small one-who-shall-make

aden." Tseyerotse rél'é tłi na-ad'oih, tsarałte ko tŏrtsĕł yar tĕkĕn
is-not." And-then out he-goes, and-then the cache under sticks

ra-ne-r̆ăr̆ădĕnĕzăihĕ yet yar roni ne-nełrał. Tseyerotse rél'é
sharpened-to-a-point there under in-the-ground he-planted. And-thus

tortseł yi to-lyo, tseyerotse rél'é tsăr̆ānītŏnă no-dinatłrał. Tse rél'é
the-cache in he-went-up, and-so the-ladder he-threw-down. And

ko taka to-ledo, yet. Ruyeł rél'é rotadleten, yuyéka rotsen. Ruyeł
now up he-stays-up, there. Then there-was-a-crash, below from. Then

ronten mo 'ŏdlă kał ro-kederéłtortł. Ruyeł ronten ko ma-kał-kun
suddenly her hips one-of he-threw-out. Then suddenly the other (hip)-also

ro-kederéłtortl. Ruyeł ronten me nĭntłĕnă kūn ro-kederéłtortl, mo rŏy'ŏ kun.
he-threw-out. Then suddenly her backbone also he-threw-out, her head also.

Ruyeł rél' kun mo kŏy'ŭdză. Ruyeł rél'é tłi no-ideyo, ei ko kaka.
Then also her guts. Then out he-came-again, the this bear.

Ruyeł rél'é te-yełni ko kél yokala: "Nedatseyaka se tsukala
Then he-says-to-him this boy poor: "Howsoever my grandmother

te-inlor tso-rokă te-silar," yełni. Tseyerotse rél'é kot tso
you-treated likewise treat-me," he-said-to-him. And-so now the-cache

dŏyī rutłyeł. Ruyeł lerén dlăr̆ălĕ ăr̆ă ye dzătŏ yerodatłlih.
edge he-grasped. Then silver-salmon a-bundle-of with his chest upon-he-struck.

Ruyeł rél'é noyar no-na-radetak. Tseyerotsarałte kun no-yedatłlih.
Then down he-fell-again. And-so-then again he-struck-him.

Tseyerotse kot yerodinik ko baaba. Ruyeł ronten
And-so now he-has-exhausted this food. Then suddenly

tłen-yoza-kastł ara yītłtŭs. Ruyeł rél'é noneka ronten
bone-small-spear with he-speared-him. Then to-the-woods suddenly

tiko talyo, rōōt, ei ko kaka. Ruyeł rél'é
to-the-woods he-went, slowly, the this bear. Then

yuneko ronten royar diletlet. Te rél'é ma katlor
far-inland suddenly to-the-ground he-fell. Then his soles

yi-rűlčkőł yunőrtsen. Tseyerotse rél'é kot no-na-radeyo,
became-white behind. And-so now he-came-down-again,

ko kél yokala. Orotse rél'é te kō yoza rélzuk. Tseyerotse rél'é
this boy poor. Thus his arrows small he-took. And-so

taltsar: "Tsukala sa! Tsukala sa!" Tseyerotse rél'é tan'a
he-began-to-cry: "Granny I-want! Granny I-want!" And-so up-stream

taban ra'oł, atsar toruno. Ruyeł rél'é yur-nedar rotsen
on-the-beach he-walks, he-cries while. Then some-where from

kětsětlăł, ítlăk. Tseyerotse rél'é yurru ra'oł, atsar toruno:
we-are-chopping, it is heard. And-then there he-goes, he-cries while:

"Tsukala sa! Tsukala sa!" nitsen. Ruyeł rél'é toneko to'ot
"Granny I-want! Granny I-want!" saying. Then inland yonder

tārmăy-ten'a ketlał. Ruyeł ré'lé kot te-yełni: "Woy!"
a-mink-man is-chopping. Then now he-says-to-him: "Woy!"

yełni; "te tsukala katsen to-yilila-ru łon! yoko
he-says-to-him; "his-grandmother upon he-did-not-make-the-song when oh! for-her

tsar-a-dadeloih!" yełni. Tseyerotse kot to-lyo. Yerotse
he-acts-as-shedding-tears!" he-says-of-him. And-so now up-he-went. Thus

rél'é keré'on. Tseyerotse rél'é yu'ut łał-ka ro réyo,
he-ate. And-so over-there in-the-underground tunnel he-entered,

tseyerotsarałte rotadlenek yet yar: "Se tsu, ustan,
and-so-then he-began-to-tell (in)that house: "My granny, to-my-knowledge,

ketelatłran," nitsen. Tseyerotse rél'é ko rałte: "Hé!" rayełni.
a-beast-has-killed," saying. And-so now then: "Hey!" they-say-to-him.

Tseyerotse rél'é ko kastł rél'é ko yi-no-reitikon. Tseyerotse rél'é ko
And-so the spears edges they-sharpened. And-so that

yet kodonten yurru na-ratałledatł. Aruruyeł ko yet no-reidedatł.
then next-day to-the-place they-started-back. And-then the there they-came-back.

Ruyeł rél'é yuneko atłtan (ko kaka). Tseyerotse rél'é ko
Then far-inland he-is-lying (the bear). And-then the

tarmay-ten'a yoza yitłtus. Ruyeł rél'é: "Wai!" ni rél'é, "kel
mink-man small speared-it. Then: "Oh!" he-says, "the-boy

yoza-késa yelatłran, łon!" te-deni. Tseyerotse rél'é na-rayitł'ortł. Mo
small-dear has-killed-it, wonder!" he says. And-so they-flayed-it. Its

kor netchőr. Tseyerotse rél'é ko yortsih ro iletan. Tseyerotse rél'é
fat was-big. And-so the raven to it-was-given. And-so

kot na-ratałledatł. Ruyeł rél'é: "Ămā!" ni rél'é (ei ko
now they-started-back. Then "I-am-sick!" he says (the this

yortsih). Tseyerotse rél'é: "Rodorłkoih soro," ni. Tseyerotse rél'é
raven). And-so: "Build-a-fire for-me," he-says. And-so

rorodiłkon ra yoro. "Rode yaka so-'oka soko tu'os,"
they-built-a-fire they for-him. "Those over-there my-wives for-me let-them-come,"

ni, "rotł yeł," ni. Tse ko: "E'é," radeni. Toruno rél'é
he-says, "a-sled with," he-says. And now: "Yes," they-say. Meanwhile

na-ratałledatł. Yune'a niłnałru no-rodedeł toruno yoyi
they-started-to-go. Up-above far-away they-go-back while in-the-air

tlo-tsărălroĭhtl. Tseyerotse rél'é yerodi'on. Tsaralte te kotonten ra
we-jerk-the-buttocks. And-so he-ate-it-all. And then next-day they

yoko tal'ots rŏtł yeł. Tseyerotse kot naltan, korodi'on to-rotłoron.
for-him went a-sled with. And here he-lies, he-has-eaten-all after.

Tseyerotse rél'é kŏrŏzĕnă ka yi-ruron, tsărāldăl yeł. Tseyerotse kot
And-so weasels' tracks he-made, ground-squirrels' also. And-so here

ra yor ni'ots, tseyerotse na-rayetadleror. Tłen yan yuur
they to-him came, and-so they-began-to-carry-him-on-sled. Bones only there

letlo, yerodi'ontsen. Tse ei ko tłen yan in'é
there-are, he-having-eaten-it-all. And the these bones only even-so

na-ratadleror. Tseyerotse rél'é na-ratałledatł. Tseyerotse rél'é ko
they-carried-on-the-sled. And-so they-started-back. And-so (to)the

yar na-rayileror, tsaralte no-réyo, tse ido no-ideyo.
house they-brought-him-on-the-sled, and he-went-down, and in he-went-back.

Ruyeł rél'é tlok yite no-idokon. Tseyerotse rél'é yerodi'on oden
Then dish in-(what-is) was-brought. And-so he-ate-it-all he

yan kun. Tseyerotse to-'oka ta-ałni: "Yaka tłen orłbats," ni.
alone again. And-so his-wives he-said-to: "Those bones boil," he-says.

Tseyerotse rayitłbats. Tseyerotse: "Yu'una nedo-no-nordokoih,"
And-so they-boiled-them. And-so: "(To)-those-over-there bring-this-in-a-dish,"

tłen yan in'é, "tōł kun." Ko yunekoten yŭ'ŭn
bones only though-it-is, "the-broth also." The second-wife over-there

no-yetałlokon. Tseyerotse yu'u yar ido no-yidokon.
brought-it-in-a-dish. And-so that-there house into she-brought-it-in-a-dish.

Ruyeł rél'é yenił'an (ei tarmay-ten'a), ruyeł yulenik, tseyerotse
Then he-looked-at-it (the mink-man), then he-took-it, and-so

ye kontoko yara rulneł. Ruyeł rél'é: "Ălkă se kontokot!"
her shoulders with-it he-drenched. Then: "Too-hot my shoulders!"

ni, tse taltsar. Yu'u rél'é ido no-ideyo, tse atsar:
she-says, and began-to-cry. There in she-went-again, and she-cries:

"Alka se kontokot!" nitsen. Ruyeł rél'é totson a-no-ltlat,
"Too-hot my shoulders!" saying. Then a-raven he-became-again,

tādlĕkăktsĕn. Ruyeł rél'é neñkoroten'a neñko-murulane a-no-rōlerŏn.
beginning-to-croak. Then the-people (into)animals were-changed-again.

Tse ko me kontokot tsorulnelen tas-kado-ledoye a-no-ltlat.
And the-one her shoulders have-been-drenched-who a-white-gull became-again.

Toruno ko kun tarmaya a-no-ltlat. Roih ron nekŭts.
Meanwhile the other a-mink became-again. Winter part-of is-short.

The Raven.

A grandmother and her grandson lived together. The boy went out one day, and saw a bear walking on the other side of the river. He went back into the house and told his grandmother. "Granny," he said, "there is a bear walking on the other side." It was in the fall, the ice running.

Then the old hag went out, and she shouted: "Swim across and come to be my husband." And the bear began to swim towards her. Meanwhile, she went back into the house and sewed an otter skin on the front of her waist. The bear had come to the shore, but was numbed by the icy water. So she went down the bank to him and caught hold of the hair on his head and thus pulled him up the bank. Then she set to taking him into the house, but the underground tunnel was too narrow, and she had to enlarge it with the axe. Finally she had him in.

She put a straw-mat under him, and threw some sticks on the fire that was burning in the fire-place, at the centre of the house. Meanwhile, the boy was frightened. "Granny is going to thaw the beast," he said; and then he added, speaking to her: "Say, while it is still numb, let us kill it!" But his grandmother said to him: "Nix!" "Without him," she added, "how will you get your toy-arrows during summer? There will be no one to make them for you."

Then the boy went out and under the cache he planted in the ground small sticks of which he had sharpened the upper end; and getting up on the cache he pushed off the ladder, and remained there, waiting. He heard a loud crash from below, and a hip of the old woman was thrown out from the house. Then the other hip was thrown in like manner, and after it the backbone, and then the guts. After this the bear came out, and the poor boy said to him: "Now do to me as you have done to my grandmother." So the bear stood on his hind legs and grabbed at the edge of the cache. Then the boy seized a bundle of dried salmon and threw it at him, hitting him in the chest. He fell down on the ground. The boy cast another bundle at him, and that was all he had. So, with a small bone-spear he speared the bear, who then started for the woods, dragging himself slowly on. But there he fell down and lay on the ground. His hind feet became white on the soles.

Then the poor boy came down, and took his small bow and arrows; and he began to cry, singing: "I want my granny! I want my granny!" and he was walking along the beach, going up, and crying as he went. Then he heard the noise of some one chopping wood, and directed his steps towards the place whence it came. He was crying as he went on, saying: "I want my granny!" then he came to a place where a man-mink was chopping wood, who began to say: "A nice show of grief this boy makes, for one who has not made his grandmother's mourning song!"

But the boy went up, not heeding him, and the people gave him to eat. From one house he went into another, and began to relate what had happened. "My grandmother has been killed," he said. "Hey!" said they, and having heard his story, they began to sharpen their spears, and the next morning they set out for

the place, carrying their spears. They found the bear lying on the ground in the woods and the little man-mink pierced it with his spear, upon which he exclaimed: "Oh! but the dear young fellow has really killed it!"

They then skinned the bear, and it was a very fat one. The whole body was given to the raven. The others were going back, but he began to complain: "I feel sick," said he. "Oh!" he added, "build a fire for me!" and they built the fire, and he stayed near it, and told the others: "Tell my two wives to come with a sled to fetch me back home," and so they went saying: "Yes, yes," and when they had gone a good way off, there was the Raven, every now and then jerking his rump upwards. So he devoured the whole carcass.

The next morning his wives started with a sled, and coming to the place, they found him lying on the ground, after he had eaten up the meat. On the snow around he had made numerous marks imitating weasel-tracks and ground-squirrel tracks. So they came to where he lay, and they put him on the sled to bring him home. There was nothing left of the bear, save the bones. These also they put on the sled and took along with them. Thus they brought him to the house, and he went down into it. A dish of meat was brought in, which he ate all to himself. Then he said to his wives: "Put the bones to boil," and they did. After they were boiled, he said again: "Take some of this in a dish" (there was nothing but bones), "to the people in the next house, and bring them some of the broth with it." The second wife filled a dish and took it into the neighbouring house. There the man-mink looked at it, and taking the dish from her hands he poured the contents on her back. Then she exclaimed, "Oh! my back is burnt!" and she began to cry. Back to her house she went, crying, and saying: "Oh! my back is burnt."

Then the woman's husband was changed again to a raven, and began to croak. The other people also were changed to animals. The man-mink returned to his mink form, and the one on whom he had poured the boiling broth was changed to a white gull.

A part of the winter has been made short.

NOTES.

"yŏrtsĭh," the raven. A lower dialect word; the other name, "totsŏn," is common to both dialects.

"kōt," a lower dialect form of "ko, kon," the demonstrative which means here, now, this. The form "kot" is adverbial.

"rél'é." This adverb of uncertainty or indetermination occurs not less than sixty-five times in this story, which evidently shows that often it hardly conveys any distinct meaning. The conjunction "tseyerotse" occurs forty-seven times, besides appearing three times in the form "tseyerot-saralte," and the conjunction or adverb "ruyeł" appears twenty-seven times alone and twice in "aruruyeł." Many of the lower tribe

speakers are profuse in the use of such words, and this narrative affords a good instance of their style.

"kāka," a four-footed animal of any kind. The term is elastic, and is sometimes applied to any warm-blooded animal. In the lower dialect only it is used occasionally, as here, to designate the brown or cinnamon bear.

"yenorūłleten" (pronounced "yenorułten"), an old decrepit woman. The plural form, derived from the multiple verb, "yenorułdakna," is rare.

"so-kŭn terélał to-roron," in order to be my husband. This singular proposal and its consequences, which are believed to have happened, or, more exactly, which have been believed in former times, account for the repugnance of Ten'a women for the bear. No Ten'a woman can be induced to sleep on a bear-skin, or wear a piece of bear fur; and in the upper tribe especially, many avoid pronouncing the name of the bear.

"no-tibaih," the present inchoative used as imperative.

"te tlōtł dōna," her waist front. The expression is coarse, alluding to the hair on the pubis, which is designated as moss, "tlotł." This observation was made to me when I read my transcription of the story, and the more decent expression: "ta katsih taa," on the edge or border of her drawers, was suggested as an equivalent. I could not ascertain what was the woman's reason for thus using the otter-skin.

"tā-īdeten," lit., he was frozen in the water, simply means that he was stiff and numb with cold for having been in the icy water.

"ulnik," pronounced "ulenik," in the lower dialect.

"nedo," a form preferred by the lower speakers, of the "ido" or "yido," or "rado," meaning "into."

"łāł tōyĕkă," has been described in the first story of the Raven, II.

"ketsātlun," in the upper dialect "ketsan-ałletlune," lit., plaited straw: a straw mat. The natives make these out of grass from the swamps, and use them to lay their blankets on.

"tīdĕnă!" nix! an interjection equivalent to an ironical negation. It is accompanied by the gesture of filipping with the middle finger.

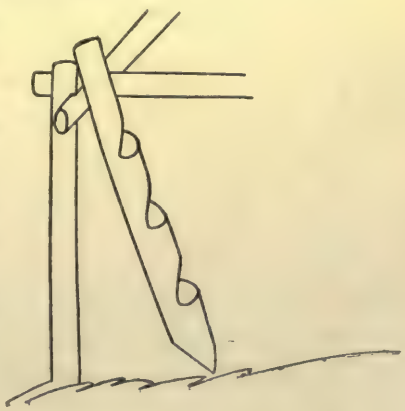
"yăkăn," the lower dialect, for "yakaten," that there person.

"kā," the preposition of wish or desire, mourning and regret. Here it denotes simply the absence or want of.

"āden," is the proper preposition to denote the absence or want of.

"tŏrtsĕł," the platform cache, consisting of a simple platform of sticks, on four posts, without a roof or sides to it.

"tsărănītōna," the ladder to climb to the cache. It consists of a log, 8–12 inches in diameter, with three or four notches for steps.



"mo'odla kał," one-half of her hips, *i.e.*, one of them.

"ro-kederêłtŏrtł." The indefinite pronoun "ke" acts as subject: something, *i.e.*, an animal, viz. the bear threw out.

"nīntłĕna," lower dialect form, for "nentłena," backbone.

"mo kŏy'ŭdza," her guts. The word is coarse, and one would say more politely "me tsīka."

"lerẽn dlărāle," a bundle of silver-salmon, lit., silver-salmon bundled. The dried fish is often tied in bundles to facilitate storage and transportation. An average bundle weighs from fifty to sixty pounds.
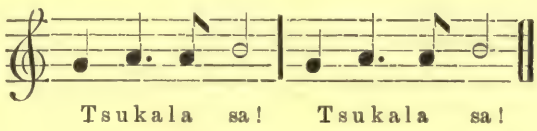
"no-na-radetak," lit., he fell down again, not that he had fallen before, but because by falling he returned to his former position. The first "no" means "down," the second (assimilated: "na") means "again."

"ko bāaba," this food, viz., the silver-salmon. There were only two bundles, and he has disposed of them.

"yitłtŭs," he speared him. The old time way of killing a bear was to spear it through the heart.

'te kō yoza," his small arrows. When the meaning is not limited by the context, "ko" implies the bow and arrows.

"tsūkāla sā," I want my granny. This is sung to the tune here given. It is as the mourning song of the boy for his grandmother. The preposition "sā," equivalent to "kā," is seldom used.



"tān'a," lower dialect for "tone'a."

"tābān," lower dialect form of "toban," "tobana."

"tsukala sa!" this is sung as before.

"tărmāya," mink; in the upper dialect "tarkudza."

"wōy," and, below, "wāi," are interjections which I never heard but in this instance, and I suspect they may have been borrowed from the whites. The sound of initial "w" is, as far as my experience goes, foreign to the language.

"łał ka," same meaning as "łał toyéka," but proper to the lower dialect.

"se tsū," my grandmother. "Tsu" is the real root meaning "grandmother," the addition "kala" being an adjective of endearment, which has become a part of the term; similarly "tsi" is the proper root noun meaning grandfather, but it is hardly ever used, except in the upper dialect, without the addition "kala."

"ŭstān," a lower pronunciation of "ĭstān," which is itself the lower form of "tasi," to my knowledge, for sure, assuredly.

"mo kŏr nĕtchŏr," its fat is abundant, it had an abundance of fat. The root "kor,"

big, becomes "tsor" in the moderate lower dialect, and "tchor," "tshor," in the two extreme dialects.

"rŏ īletan," it was given to. The Ten'a hunt is conducted on communistic principles: in a band of hunters it is never the one who killed a piece of large game who gets it; he generally receives but an insignificant share, or none at all. By common agreement it is distributed among the party, or given whole to one who then is expected to cook it and serve it as a banquet to the whole village. Such was the case of the raven here, and with his usual low craft he immediately devises a plan to eat the whole of it by himself.

"ămā," in upper dialect "ăbā," expresses pain, sickness, of any description.

"é'é," yes. A lower dialect word implying approval.

"nīłnāłrū," far. The upper dialect uses "nīłlōtrū," viz., the root "lōt" instead of the root "nāł."

"yōyi tlo-tsărălrŏihtł," the 1st person plural indefinite for the 3rd singular: he jerks his behind up in the air. When the raven eats he stops at intervals to evacuate, and this action is accompanied by an upward motion of his tail. Mentioning simply this motion here implies the action which it accompanies, and the eating that precedes this.

"kŏrōzĕnă kā" . . . etc. He made these tracks on the snow so as to make believe that these animals had eaten the meat.

"alka," in the lower dialect, equivalent to "atłeba" in the upper one.

"a-no-ltlāt," for "a-no-łlelat." The verb "a-eslar," I become, has two Reduplicatives: "a-no-estlar" and "a-no-eselar."

"tādlekāk," he began to croak. The verb "delekāk," to croak, from a root "kāk," which is an onomatopœia.

"tăs-kădŏ-lĕdōye," white gull. The lower dialect term; the upper one says "bats." Text obtained from Michael Kestak, a native of Madzatetseł'ihten, twenty-five miles below Kaltag.

Tsīłtsăă.

The Mouse.

Tsiłtsaa na-rabał, tsedeni. Me tlŏkĕnkă niłkootset tōkăyar
A-mouse swims-across, it-is-said. His rumps-upon on-both-sides houses

roderélo, mo kŏkĕnlōr nilkootset kūn. Ni-ro niban, tseyerotse
there-are, his shoulders-upon on-both-sides also. To-land he-swam, and-so

to-lyo, tseyerotsarałte ra-dzăt̆or-rŭtłkoih. Arurūyeł yar
up-he-went, and-so-then he-struck-his-breast-on-the-ground. Then the-houses

rābă-rŏdīlĕdătł. Tseyerotse yar yido niyo. Nił-neka
fell-in-a-line-on-the-ground. And-then a-house into he-went. A-pair-of-wives

ro-datłtłé, mizeni. Tseyerotsarałte yūtłĕnĕn tse ni-nāt'ōn:
he-keeps, he-is-said. And-so-then the-first-wife toward he-turned-his-face;

"Ken łǫ eit mor ko-lo-nileya kantaye?" Tseyerotsarałte
"What is-it there to-which you-busy-your-hands it-seems?" And-so-then

nǫlkĕtlă yutłur rotsen dza niłton. Ye yi no-rotadleyar, aruruyeł
a-bag riverward from out she-took. It in she-searched, then

kĕt'ǫn taak dza niłkuł, me dzătǫ-yĕkă kūn kŭn, kĕnŏyĕkă
(a) moose-skin parkie out she-took, its under-breast fish-roe dried, fish-slices

kŭn, kĕmĕdă kŭn ără no-ruletsin kantaye. Tseyerotsarałte ne-zolekūł.
dried, belly-fins dried with ornamented it-seems-which. And-so-then we-put-it-on.

Tseyerotsarałte yunekoten kūn tse ni-tsenat'on: "Ken łǫ ei
And-so-then the-second-wife also toward we-turned-our-face: "What is-it the

yakat mor ko-lo-nileya kantaye?" yełni. Arurūyeł
there to-which you-busy-your-hands it-seems?" he-says-to-her. Then

yuneko yunura detadlenik. Aruruyeł ronten nolketla dza
landwards on-the-other-side she-put-her-hand. Then suddenly a-bag out

niłton. Ye yi no-rotadleyar ru ruyeł ket'on kātsĭh dza nilo,
she-took. It in she-searched when then moose-skin pants out she-took,

kūn kŭn yeł, kenoyeka kŭn yeł, kemeda kŭn yeł me
fish-roe dried and, fish-slices dried and, belly-fins dried and its

tsŭts-nĕn-tłĭyĕkă niłkootsen no-on-rudletsin kantaye.
down-from-the-elbow-lines on-both-sides are-ornamented-with which-seems.

Tseyerotsarałte ye yi dǫle'ātł. "Na'a kā ne-yetaras'oł,"
And-so-then it in he-stepped. "My-mother mourning-for I-shall-dance,"

ni. Rodo-kezeré'on, tsedeni; rałte ko tǫn ka
he-says. We-made-a-song, it-is-said; and (this is) the-one his-mother for

yedatłtsine: "Se tsu ne-no-dălĕstłĕtłtsĕn, ne-no-sitłtantsen, rŏkătŏr
which-he-made: "My granny she-carried-me-about, in-the-same-way

ka-radesrałtsen. Yekesroihtł! Yekesroihtł! Yekesroihtł!" Kesaltlih
I-carry-my-tail. I-jerk-it-up! I-jerk-it-up! I-jerk-it-up!" We-began-to-dance

me yeł. To-rotłoron rałte sadlekōk, tsedeni, neñkoroten'a lonna yeł.
it with. Thereafter also we-began-to-run, it-is-said, people many with.

Aruruyeł ronten na'a ra-to-tenatatłtan. Aruruyeł ronten
And-then suddenly behind they-began-to-leave-us. And-then suddenly

tena-ka ka royi to-dolenen. Tseyerotse talzĕł, mizeni:
a-human-foot track in he-fell-in-the-water. And-so he-shouted, he-is-said:

"Ko ro-no-sorłtaih!" tsedeni. "Tālĕk!" tena azeni; "nor ne tsū
"Here pull-me-out!" we-say. "Shut-up!" we-say-to-us; "for thy granny

kāt rōłĭtsĕn no-kedīn'ōla." "Ko ralte ruzuntse ni-do-keditaras'oł,"
mourning-to well your-did-not-compose." "Now though well I-shall-compose,"

tsedeni, irû'. Tseyerotse yet taldo, mizeni. Tseyerotse nen
we-say, in-vain. And-so there he-remains, he-is-said. And-so the-ground

yĕka talyo, mizeni. Tseyerotse ko taāk a-dīlŏyĕ rodi'on, kenoyeka
under he-went, he-is-said. And-so the his-parkie what-is-on he-ate-all, fish-slices

yeł, kemeda yeł, kĕdzŏrlĕdŏyĕ kŭn yeł. Aruruyeł ronten to-'oka
too, belly-fins too, fish-hearts dried too. And-then unexpectedly his-wives

notérna tsŏkĕnkăt ruruł'anten, eit toyartsen ro-réyo. Tseyerotsarałte
two a-cellar-cache where-they have, there from-below he-went-in. And-so-then

kŭn tal'on. A'on ruyeł ronten mo-'oka tsokenka
fish-roe he-began-to-eat. He-eats while suddenly his-wives the-cellar-cache

no-rutenadle'an. Aruruyeł ronten: kun, łoł keto'on, łon!
came-to-inspect. And-then suddenly: the-fish-roe, oh! is-being-eaten, strange!

Tseyerotse rorodiłkon, tseyerotsarałte royi roroderéłtsik. Aruruyeł
And-so they-made-a-fire, and-so-then in-the-hole they-made-a-smudge. And-then

ronten me-do-sīs-dăl̆ĕnĕn, mizeni. Tseyerotse yet rotłoron, yet
unexpectedly he-was-choked, he-is-said. And-so there after, there

rurunatł'an ru ruyeł tłŭlĕtłŭrĕ, eite ronten yet atłtan.
they-examined when then a-yellow-mouse, it perchance there lies.

Tseyerotsarałte rayulnik tse tłi rayetatłrał, ra ye tse raréyo
And-so-then they-took-it and out they-threw-it-off, they it against had-spoken

to-rotłoron: "Se ke dŏlŭlă tĕdlă!" Roih ron kŭts.
after-that: "My own muzzle slender!" Winter part-of short.

The Mouse.

There was a mouse swimming across the river. He carried houses on his rump, houses also on his shoulders. He landed, went up the bank, and there he struck his breast on the ground. The houses fell off and set themselves all in a row. In one of them he entered.

He was a two-wife man. Turning toward his first wife, he said, "What is the work at which your hands are kept busy?" Then from the riverward side of the house she took a bag, and fumbled in it, and produced a parkie made of moose-skin, the front of which was ornamented with dried fish eggs, dried slices of fish- and dried ventral fins. He slipped it on; and turning to his second wife, he also, said to her, "What is the work that keeps your hands busy?" And putting her hand to the woodward side of the house, she took a bag and searched in it. And she pulled out a pair of moose-skin trousers, on which a strip of the same ornaments was sewn on each side, from the elbow downwards; dried fish eggs, slices of dried fish, and dried ventral fins. And he put them on.

"Now," said he, "I will dance the mourning dance for my mother." And he made a song, a mourning song for his mother: "O my granny, who carried me about, as she carried her tail, so do I. I jerk it, I jerk it, I jerk it!" And to the tune he danced.

When this was over they began to run a race, many together. And it happened that the others passed him and left him behind. And he came to a track of a human foot in the mud that had filled up with water. In this he fell, and immediately began to shout for help. "Save me from this," he exclaimed.

"Don't you dare to open your mouth!" they said, "you haven't done justice to your grandmother's mourning." "Oh, but I will," he said, "yes, I will." His protests were useless, they left him there.

And then he went under the ground, boring his way through. And as he had nothing to eat he fed on the ornaments that were sewn on his clothes, the dried fish slices, the dried ventral fins, the dried breasts of fish. He ate them all, and having exhausted this supply, he chanced to come, in his underground wanderings, to the cellar-cache of his two wives. There he began to feed on the fish-roe. But it happened then that they bethought themselves of taking a look at the underground cache.

They were surprised to find the fish-roe was being eaten, and they built a fire and made a smudge in the hole so that he was smothered and died. When they came back to see the place they found in it a yellow mouse, lying dead. They took it and threw it out; but before doing so they expressed their disgust by saying, "Oh, the slender nose!"

A part of the winter is shortened.

Notes.

"tsīłtsaa," lower dialect for "tiłtsaa," mouse. See VII. The term is a generic one, applied to the three species known to the natives. These are: 1. "tła-letłŭre," in lower dialect "tłu-letlŭre"; 2. "koih ke tiłtsaa," lower, "koih ke tsiłtsaa"; 3. "ludołtsihtla." The two first ones are much alike, somewhat larger than our common mouse, with a very short tail, seldom more than half-inch long; the "tła-letlŭre" is of a yellowish grey, and the "koih-ke-tiłtsaa" of a dark grey colour. The "ludołtsihtla" is much smaller, with a long tail, about twice the length of its body. It will appear from the conclusion of the story that the hero of it is a "tłu-letlŭre."

"me tlokenka," his rumps. The term is quite precise and denotes the fold or crease of the skin at the joining of the thigh with the body.

"mo kōkenlor," his shoulders. Here also the Ten'a term is more precise than ours; it designates the edge of the shoulder-blade.

"nił-neka," as "nił-roneka" at the beginning of IX.

"yutłĕnen," lower dialect, for "yutłīten: tłĕn" and "tłīt" are synonyms.

"ko-lo-nīleya," lit. you move your hands about.

"me tsūts nĕn tłīyéka," lit. its elbows (to the) ground in a straight line.

"ye yi dōle'ātł," he stepped into them. The Ten'a use the phrase "to put on" only for the upper garments, which are really donned by being put upon us; but for the nether garments which are put on by introducing the feet into them, the word used is "to step into."

"na'a," lower dialect for "ina'a," mamma.

"ne-no-dālĕstłĕtłtsen." I could not obtain a satisfactory explanation of this word.

"se tsū," he calls his mother his grandmother, by a figure of speech admitted in Ten'a.

"sādlekōk," we began to run (a race). It is by no means unusual to have races at a mourning feast.

"ra-to-tĕnātātlṭān." This must be a mistake for the passive: "ra-to-tenatadletan," we (he) began to be left behind.

"tenā ka ka royi to-dōlenen," he fell in the water in the track left by a human foot. This reminds the hearers that he is a mouse, and in their imagination he is already half-transformed, as it were, though he continues to speak:—they can almost see him in the act of transformation, and the very imagination is highly entertaining to them.

"nĕn yĕkă tālyo," he went underground. Now the transformation is complete.

"kĕdzŏrlĕdōye," fish-heart; a part of the breast considered as a choice morsel.

"tsōkĕnkāt," a cellar-cache, an underground cache. These are small cavities, about 4 feet in length and breadth, and 2½ feet in height, generally dug out on a slope, wherein the fish-roe is stored in birch-baskets. It undergoes a partial decomposition which does not render it unfit to be used, especially as dog-feed. In the upper dialect "tsōkĕnkāt" is replaced by "tsōken'ōn."

"kun ło keto'on, łon"; to their surprise some animal is eating the fish eggs. The indefinite pronoun "ke" as subject, representing some animal, unknown, or rather, undetermined. They are not aware that their husband is the thief.

"royi roroderéłtsīk," they made a smudge in the hole, with the expected result, viz., to smother the vermin with the smoke.

"tłŭlĕtłŭre." See the first note of this story.

"se ke dolūla tĕdla," my own slender muzzle. The phrase is not said by them as personating the mouse who would thus speak of his own nose, for if it were so the possessive article "ke" could not be used. They call him "slender muzzle," and one of them, or each separately, addressing him, says in mock endearment: "Oh, my own dear slender muzzle!"

The text given above was supplied by Peter Ruyolé of Nełenorodal'oten.

Kél yŏkălă.

The-young-man-poor.

Ko rél' tsorotan. Eit rél' tōyŏn ledo, eit mo ŏtŏr
Here perhaps we-dwell. There perhaps a-rich-man lives, there him near

rałte mōrō ko-idenihen mo ŏtĕ ledo. Tsarałte mo-'ot rulan, ko kél
also for-him one-who-works him near lives. And his-wife there-is, this youth

yokala, mo-'ot nezun. Tsarałte toyon yet ledo. Tsarałte te-yełni:
poor, his-wife is-good. And the-rich-man there lives. And he-says-to-him:

"Nor no-'ot se tlo nełtaih," yełni, iru. "Nedan," yełni
"Yonder your-wife me give-to," he-says-to-him, in-vain. "No," says-to-him

ko kél yokala; "Nedan," yełni. Tseyerotse to-'ot rŏ-nětsĕn tso-royan.
this lad poor; "No," he-says-to-him. And-thus his-wife he-keeps always.

Tseyerotse te-yełni: "Nedan ło yakat tłā yīt, dza
And-so he-says-to-him: "Where is that-place rock in, out

no-to-kărăltăr razeniten, eit rotse ti'oih a?" yełni,
devils-jump-in-the-water where-it-is-said, thither go will-you?" he-says-to-him,

ko kél yokala ałni. "ŭntĕ, nor mĕ-tĕn'ă-ĭtlŏrtlă gĕtă
this lad poor he-says-to. "Yes,-on-condition-that yonder sword big

sor ni niłtih a?" yełni. "O'o," yełni ko toyon; "O'o,"
to-me you-will-lend?" he-says-to-him. "Yes," to-him-says the boss; "Yes,"

ni. Tseyerotse yet rotse talyo; tseyerotset ayu ra'oł,
says-he. And-so thither he-went; and-so thereabout he-goes,

ra'ol. Aruruyeł ronten tłā, dłeł geta: yuur ra'oł. Aruruyeł
goes. Then suddenly a-rock, a-mountain big: there he-goes. Then

sărnŏ rŏdlŏt dza niyo. Aruruyeł tła geta, niłkootsen
(to) a-creek's headwaters out he-came. Then rocks huge, on-both-sides

totłena tła a-dĕnŏdăkăih ru talyo. Aruruyeł yutoko
to-the-main-water rocks standing-high where he-is-going. Then above

rŏntŏnă, yur yutoko ronten bīlŏrkă kantaye eite ronten taka
it-projects, there above suddenly ropes things-like these suddenly upwards

ne-no-nodetsułtł. Tseyero toruno ra'oł, ra'oł, ra'oł. Kota keteti
twirl-and-twist. And-so meanwhile he-goes, goes, goes. Now extremely

yutoko rontona bilorka kantaye ketite taka ne-no-inałletsuł.
up-above projecting ropes things-like extremely upward twirl-and-twist.

Toruno ra'oł, sarno totłena ra'oł. Tseyerotse kota
Meanwhile he-goes, (on) the-creek to-the-water he-goes. And-so now

ni-niyo, tse yutaka ronił'an. Aruruyeł kon, ronten ūłŏk
he-has-stopped, and above he-looks. And-then here, strange kettle

kantaye eite yitse toyartsen tu kantaye nelekŭr, tseyerotse
a-thing-like this from-within from-beneath water a-thing-like is-boiling, and-so

taka no-kĕdzĕstł-rolał. Aruruyeł tena yatłena kāntăyĕ me tortsena
up the-large-bubbles-come. And-then our jaw a-thing-like him above

dĭdŏkŏih, łōn! Tseyerotse toyékatsen kun keinalton. Aruruyeł kun
is-hanging, oh! And-so underneath also he-turns-his-eyes. And-then again

tena yatłena kantaye me yartsena didokoih, łon! Nĕkĕdzăltără lā
our jaw a-thing-like him beneath is-stretched, oh! (In) A-devil's mouth

réyo, kadeyor, łon! royeł-tse-tenīga torūno. ătłĕyĕ-łŏn eite
he-has-come, as-it-were, oh! he-is-not-aware while. And-for-sure in-this (devil's)

yărtŏyīt: kūn tu nelekŭr kātān, ko nekedzaltara yartoyit: ye
throat: also water boils as-it-were, (in) this devil's throat: (in) its

lăkăt réyo, łon! Tseyerotse ko bilorka kantaye ma-urinałletsŭł. Eit
neck he-has-come, oh! And-so the ropes things-like around-him-twist. There

ko rotortsena yutoko ma-yurinałletsŭle, eite ko nekedzaltara
the downward (from) above things-around-him-twisted, these the devil's

yătłĕnă eite tsen ko yutoko rontona năralnĭhă kantaye taka
jaw it from here above projecting rawhide things-like upward

ne-no-nodetsułtł. Tseyerotse ko yutoko ko rotŏrtsena ma-yurinałletsŭle
are-twisting. And-so the above the downwards around-him-twisted

naltlortł, ko me-tena-itlortla ara. Tseyerotsen yet tă'ănă ror
he-severed, the sword by-means-of. And-thus there away-from through

iletlŭr. Tseyerotsen ko tena yatłena kantaye eite mo rŭ rulan:
he-skipped. And-so the our jaw thing-like this its teeth there-are:

eite kéłoke ūlnīk. Tseyerotsen no-tałleyo. Tseyerotsen te yar
(of) these one he-took. And-so he-went-back. And-so (to) his house

no-ideyo. Tseyerotsen ko nekedzaltara rŭ te-ke tŏyŏnă tlo-ré'on.
he-came-back. And-so the devil's tooth his boss he-gave-to.

Tseyerotsen ko me-tena-itlortla toyon tlo-no-réton. Tseyerotse ko soltan
And-so the sword the-boss he-gave-back-to. And-so the woman

to-kŭn kătlō ledo. Tseyerotse mo-kŭn no-ideyo. Tseyerotse
her-husband in-place-of stays. And-so her-husband has-come-back. And-so

tłete rotaltlet, tseyerotset rałtsen to-kŭn nŏrŏł rōlenek:
the-night has-begun, and-then in-the-evening her-husband to she-told:

"Nor, tasi, nor toyon, yu'utsen sor ido-niyo: 'So-'ot
"Yonder, you-know, yonder rich-man, from-there to-me came-in: 'My-wife

inlan,' sederéni, iru," yełni. Tseyerotse to-kŭn noroł rōlenek;
be,' he-said-to-me, in-vain," she-says-to-him. And-so her-husband to she-told;

inte mo-kŭn dza-do-dile'ila. Tse yet rotłoron kota te yar ledo,
but her-husband answered-not. And there after then (in) his house he-stays,

ko kéla, ledo, ledo. Aruruyeł yu'utse toyon mor ro na-radeyo,
the youth, stays, stays. And-then from-over-there the-boss to-him came-in-again,

tseyero te-yełni: "Nedanyakat teleł-ten'a tŏyăr rutł'on tsedeni
and-so he-says-to-him Where the-eagle-man (his) nest has it-is-said

tān, eit-rotse ti oih a?" yełni. "O'o," yełni;
as-we-know, thither go will-you?" he-says-to-him. "Yes," he-says-to-him;

"ro'é tĕltŭdlă sor ni-nitih," yełni. "O'o," yełni ei toyon;
"that gun to-me lend," he-says-to-him. "Yes," says-to-him the rich-man;

"O'o," ni. Tseyerotse yu'ut te yar ko toyon te ke teltŭdla
"Yes," he-says. And-so there (to) his house the boss his own gun

oko no-łleyo, tse yor ni-yeniton. Kĕdŏtlă leł ko-iłkuł, yetăne;
for went, and to-him he-lent-it. (A)-bullet-sack he-carries, which-he-has;
[(A)-cartridge-belt]

te tsĕdă ko-iraih; tseyerotse ra'oł. Yuur ra'oł; ko teltŭdla ratił,
his blanket he-packs; and-so he-goes. There he-goes; the gun he-packs,

ratił; tseyerotse ayu ra'oł. Aruruyeł ronten dłeł geta ro niyo,
packs; and-so there he-goes. And-then suddenly mountain big to he-came,

tse no-do'oł, no-do'oł. Aruruyeł ronten yutoko me tlĭdŏ
and he-goes-around, goes-around. And-then suddenly above him overhead-of

ronten, yătsĕnă rŏbĕtă ronten, tsĕbă kŏr notérke roni-deré'o, tseyerotset
suddenly, on-that-side a-flat suddenly, spruce large two are-standing, and-thus

yutoko ronten tĕlĕlă me tĕlŏyīt tōkăyăr rutł'on, tse yutoko yor
above suddenly an-eagle it on-top-of (its)-nest has, and up to-them

ro-lyo, tseyerotset ye kĕn rŏn ni-niyo, tseyerotset ye tĕlŏrŏ
he-climbed, and-so their foot at he-came, and-so (to) their top

diyo, tseyerotset ko tĕlĕl tŭr to-lo'one eite yartsena, telel tŭr
he-climbed, and the eagle's nest which-is-up this beneath (the) eagle's nest

otor yedenaltlih ko teltŭdla, tseyerotse yet to-ledo. Keten'a
along-side-of he-thrust-it the gun, and-so there he-stays-up. Young-ones

notérke ma kado dadletłé. Tseyerotse ko-yur-to-lyote ko tĕłĕn kĕlă
two it upon are-staying. And-so when-he-came-up-there the elder-one male
(from-the-place-where-he-came)

ta-ałni: "Ro nōn yel, ro ne-tō, yel, rŏdē?"
he-says-to: "Where your-mother too, where your-father, too, where?"

yełni. Tseyerotse: "ĭtăă an-ko-ranātor ranoy oko; ĭtăă
he-says-to-him. And-so: "My-father they-are-hunting deer for; my-father

ĭnăă yeł an-ko-ranator," yełni. "Non no-notortł tor,
my-mother too they-are-hunting," he-says-to-him. "Your-mother comes-back when,

nedatse to-rŏtan?" yełni. Tseyerotse: "O'o, inaa no-rodenihtł
how does-it-do?" he-says-to-him. And-so: "Yes, my-mother comes-back

tor, orota anteit yoł kĕntłŭkă a-ałyŏł," ni ko kéla, rŏlenĕk.
when, then indeed snow wet it-snows," says the young-male, he-tells.

Tse: "O'o," yełni; "tse ne-to no-rodenihtł tor, orote
And: "Yes," he-says-to-him; "and your-father comes-back when, then

nedatse to-rotan?" "Kénlu a-ałyoł, ka-to-rotan," yełni. "O'o,"
how does-it-do?" "Hailstones it-snows, as-it-were," he-says-to-him. "Yes,"

yełni. Kota ye noroł rōlenek, ko kéla. Tseyerotse kon
he-says-to-him. Now him to he-has-told, the young-male. And-so here

ta-raledo ko telel yoza, toruno ko kél yokala: "Nedakun sor
they-stay the eagles small, meanwhile the lad poor: "Do-not about-me

rurlenekayu! Ne-tĕłnăkă noroł sor rorlenek ta, yor ĭtĕlărătłrał,"
do-not-tell! Your-parents to about-me you-tell if, you I-will-kill,"

rołni. Aruruyeł ronten yoł kentluka a-rélyotł, rukŭdzatsen,
he-says-to-him. And-then suddenly snow wet it-snowed, just-a-little,

tseyerotset kon ledo. Aruruyeł raban no-natok, tseyerotset
and-then here he-stays. And-then their-mother flew-back, and-then

yatsena ma kalekŭna tor ronten! ranoy me-ten'a, kōn kūn
on-one-side her claws among oh! deer's young-ones, here too

ranoy me-ten'a, kon kun ranoy me-ten'a, kon kun ranoy me-ten'a
a-deer's young, here too a-deer's young, here too a-deer's young

kon kun ranoy me-ten'a; tseyerotse yatsen rałte neñkoroten'a, tse
here too a-deer's young; and-then on-the-other-side people, and

kon kun ten'a, tse kon kun ten'a, tse kon kun ten'a, tse kon
here too a-man, and here too a-man, and here too a-man, and here

kun ten'a. Tseyerotse te tŭr bără to-no-yidleyo, ye yeł
too a-man. And-so her nest on-the-edge-of she-put-them-up, them with

to-no-naltok. Tseyerotse ko neñkoroten'a eina kōn dza
she-has-come-back. And-so those people (of) them the-bowels out

runilo, tseyerotse ko te-ten'aka tor yiltlo. Kon to-ledo.
she-took, and these her-young-ones to she-gave-them. Here she-stays.

Aruruyeł ronten ye-yeł-ketłtŭł ko kéł yokala, tse noyéka no-yeréłtlak,
Then suddenly he-shot-her the lad poor, and down he-threw-her,

tseyerotse ko kon neñkoroten'ayu ranoya yeł to-keletloye, eite
and-then these here people deer also that-are-up-here, these

tětłĕkă noyéka no-réłdihtł, tseyerotse kłé kon ledo. "Neł-e-kă'ănă
all down he-pitched, and-so still here he-stays. "Both-of-you

yor-to noroł sor rurlenekayu," rołni. Tseyerotse kłé
your-father to about-me do-not-tell," he-says-to-him. And-so still

kon to-ledo. Aruruyeł ronten kénlu a-réłyotł: yu'u ronten
here he-stays. And-then suddenly hailstones it-snowed: over-there suddenly

telela no-notortł, tseyerotse ko te tŭr bara kon to-no-nałledo.
an-eagle is-flying-back, and-so this his nest's edge here he-alighted-again.

Tseyerotset ko te-ten'aka, ta-ałni: "Rō yor-ōn, rŏdé?"
And-so these his-young-ones, he-says-to: "Where your-mother, where?"

rołni; "rō-tān se kootsen no-netorten, kłé, łōn!
he-says-to-them; "as-I-know me ahead-of she-flies-back, not-yet, strange!

no-rałleniha?" te-ten'aka ta-ałni. Tseyerotse: "Nedén; inaa
she-is-not-back?" his-young-ones he-says-to. And-so: "Oh! no; my-mother

kłé kălă; rŏdĕtsĕn?" rayełni. "Kłé łon! no-rałleniha'an!
still is-not-here; where-indeed?" they-say-to-him. "Not-yet oh! not-come-back!

to-dorni?" rołni. "Nedén, kłé inaa kala," radeni.
what-say-you?" he-says-to-them. "Oh! no, still my-mother not-here," they-say.

Tseyerotse kot ma kălĕkŭnă lŏră ranoy me-ten'aka ranāleta;
And-so now his claws about deer's young-ones one-to-each;

yatsen rałte neñkoroten'a ma kalekŭna lora rote-ranaleta.
on-the-other-side people his claws in one-apiece.

Ko eite noyéka no-réłdihtł. Tse tŭr bara detadlezōk, ko
The these down he-pitched. And (on the) nest's edge he-began-to-scream, this

telela. Tseyerotse tŭr bara tuura no-kălĕdzŭihtł-rŏdĕtādlĕzăr.
eagle. And-so (on the) nest's edge there he-claws (opens-and-shuts-his-claws).

Tseyerotse ye-yeł-ketłtŭł, ko kon ten'a ledōneu. Tseyerot
And-so he-shot-him, the here man who-is. And-thus

na-raletlĕt. Tseyerotset ko kon keten'aka telel yoza kon
he-fell-down. And-so the here young-ones eagles small here

to-dadletłéyé iről a. Torun kota no-na-radeyo. Tseyerotse
that-are-up he-killed-not. Meanwhile then he-went-down-again. And-so

ya ka ra-an-denatłtotł, eite kŏtă no-detadleyo. Tseyerotse
their feet he-cut-off, these now he-took-with-him. And-so

te kŏnōn, te yar no-ideyo. Tseyerotse ko toyon
(to) his house, his place he-went-back. And-so the rich-man

tlo-no-yeréton, ko teltŭdla, tseyero ko teleł ka yeł toyon
he-gave-it-back-to, the gun, and-so the eagle's feet also the-boss

tlo-kederélo. Tse yuur ledo, ledo, ledo, ko kél yokala.
he-gave-to. And there he-stays, stays, stays, the youth poor.

Aruruyeł yu'utsen mor ro-notsod'ots (ko toyon
And-then from-over-there to-him we-came-in-again (the rich-man

antei te-tanen). Tseyerotse te-mizeni: "Nĕdădĕnyăkăt kayar
it-is who-does-so). And-so we-say-to-him: "Where a-village

rul'on tsedeniten, eit rotse ti'oih a?" mizeni. Tseyerotse:
is it-is-said, thither go will-you?" we-say-to-him. And-so:

"O'o," ni. Tseyerotsen nūlăr tsĕdzā yeł lărăn yeł ketalran.
"Yes," he-says. And-so salmon dried also silver-salmon also he-packs.

Tseyerotse yu'u ra'oł, ra'ōl, ra'oł, ra'ol, ra'ol, ŏdă, kōrăł, korał,
And-so there he-goes, goes, goes, goes, goes, all-along, he-packs, packs,

korał. Kota, oda, oda, korał, korał. Kota no-rotădlerīk dzan
packs. Then, all-along, all-along, he-packs, packs. Now it-has-begun-to-thaw days

tor; ra-no-ketalt'ok. Sō ărá dzan tor ronelekŭr, tseyero
during; the-sun-shines-again. The-sun by days during it-is-warm, and-so

nūdăr no-tadlerik. Ra'ol; kota ranatłtsūts. Kota, nular
the-snow is-thawing. He-goes; now he-is-skin-and-bones. Now, (the) salmon

tsedza yeł larana yeł korodi'on. Tsarałte ate-dzan-tor ăłă'ŏnă
dried also (the) silxer-salmon also he-has-eaten-up. And every-day grouse

eite a-alaih, a-alaih; eite kat. Tłeta alek, tłeta alek,
these he-kills, he-kills; these he-wants. Night he-spends, night he-spends,

tłeta alek, tłeta alek, tłeta alek. Kota, ra'oł, oda.
night he-spends, night he-spends, night he-spends. Then, he-goes, all-the-time.

Aruruyeł tōkŭrbără ra-diyo. Aruruyeł yunłet ronten kayar rulan:
And-then the-sea-coast he-reached. And-then hillward suddenly a-village there-is:

yet rotse ra'ol, ra'ol, ra'ol, ra'ol, ra'ol, oda ra'ol; tseyerotse yet
there to he-goes, goes, goes, goes, goes, all-along he-goes; and-then there

ido-niyo. Aruruyeł yet tena kala, tena kala. Tse ayu yar
he-went-in. And-then there people is-not, people is-not. And there in-the-house

ko-id'oih. Aruruyeł yuneko-yutokot ronten măsĕmăkĕ to-letlo, dĭnkā
he-walks. And-then inland-up unexpectedly boots there-are, silver

ra-dīlōtĕn. Tseyerotse, tā-to-ruta-rū, yasek daletloye nitsen,
in-a-place-lined-with. And-so, in-a-place-like-this, a-box lying (there) behind,

royi radetlak. Tseyerotse kota, to-totlor, kanta. Keł'ona tokodékun
in-the-hole he-crept. And-so now, he-shall-die, he-is-like. He-eats-not because

ranatłkŭn, me nĕlăn kala: keł'ona. Tseyerotse letan: tseyerotse
he-is-very-thin, his flesh there-is-not: he-eats-not. And-so he-lies: and-so

yuur letan. Aruruyeł yu'utse ronten ido-no-tsōdedĕł: ten'a lon.
there he-lies. And-then from-yonder suddenly we-come-back-in: people many.

Tseyerotse yu'utse korokootsen ido-na-rad'olen eiten ronten te-deni:
And-so from-there ahead (of-them) the-one-coming-back-in this-one suddenly says:

"Masemake, ke-no-rélnihtł," ni. Aruruyeł ko kon masemake to-letloye
"Boots, cook-something." he says. And-then the here boots that-are-up

no-rédatł. Aruruyeł yunła belida lo'ne ni-nidatł, ko masemake.
jump-down. And-then hillward a-stove that-is they-came-to these boots.

Tseyerotset ayu ko-idedał, oden zīt, ten'a kălă. Tseyerotse
And-so there they-walk, themselves alone, a-man there-is-not. And-so

yunłet ronten belida yi no-rŏdĭdŏkōn tseyerotse kĕtł a-no-tātłnīk,
hillward suddenly the-stove in they-made-a-fire and-so food they-are-cooking,

ko masemake. Tseyerotse ketł a-na-atłnik, kĕłŭră ketł a-na-atłnik.
the boots. And-so food they-have-cooked, quick food they-have-cooked.

Tseyerotse stōl kătsĕn tlok to-no-letlo. Tseyerotse kélur yen-keréi'on,
And-so (the) table upon plates they-put. And-so quick they-ate,

ko no-idedatłna. Tseyerotse na'an kūnūn tłi na-ratałledatł, tseyerotse
those who-have-come-back. And-so off again out they-went, and-so

rabe kala. Tseyerotse dza no-idetlak ko niyonen, tseyerotse tłi
them there-is-not. And-so out he-crept-again the one-who-came, and-so out

niyo. Tseyerotse nitłkaatse ronił'an. Aruruyeł yur nitłkaatsen ronten
he-went. And-so on-both-sides he-looks. And-then there on-both-sides suddenly

lŏsĕt rabe-ko-ral-iledał. Tseyerotse ido na-rad'oł ko niyonen.
horses carry-them-on-their-backs. And-so in he-comes-again, the one-who-came.

Aruruyeł ko masemake kon to-letloye, eite ta-ałni: "Masemake,
And-then the boots here that-are-up, them he-says-to: "Boots,

ke-no-rélnihtł." Tseyerotse ko masemake no-rédatł, tseyerote ketł a-na-atłnik,
cook-something." And-so the boots jumped-down, and-so food they-cooked,

tseyerotse ko niyonen akeréł'on. Tseyerotse tlok a-no-to-ltlo. Tseyerotse
and-so the newcomer they-fed. And-so the-dishes they-washed. And-so

kota, kon to-no-łledatł. Tseyerotse kon diñka ra-diloten royan
then, here they-went-up-again. And-so here silver a-place-lined-with only

to-letlo. Tseyerotset ko yunura yāsĕk réta ru, aru royi na-radetlak.
they-stay. And-so the opposite box where-he-lay, there in-the-hole he-crept-back.

Tseyerotset kota no-réidedatł. Tseyerotse yi-no-kereid'on, ko masemake
And-so then they-came-back. And-so they-ate-again, the boots

raboro ketł a-na-rałnihtł. Tseyerotsen tłete rorélet: rănāldzĕt.
for-them food they-cook. And-so the-night passed: they-lay-down.

Tseyero kota dza-ranidak, tseyerotse yaka tłărū dza-nileten
And-so then they-woke-up, and-so that (one who) first woke-up

te-deni: "Masemake, ke-no-rélnihtł," ni. Tseyerotse ko masemake ko
says: "Boots, cook-something," he-says. And-so the boots here

to-letloye ko no-rédatł. Tseyerotsen yi-no-kereid'on, dza-ranidak tseyerotsen.
that-are here came-down. And-so they-ate-again, they-woke-up just-after.

Tseyero tłi no-reidedatł, tan. Tseyerotsen dza no-ideyo ko kon.
And-so out they-went-again, as-before. And-so out he-came the here.

Tseyerotse ōdĕ kor te-yełni: "Masemake, ke-no-rélnihtł," yełni.
And-so he also says-to-them: "Boots, cook-something," he-says-them.

Tseyerotse moro ketł a-no-yitłnik, tseyerotse no-kōd'on, ko ten'a.
And-so for-him food they-cooked, and-so he-ate-again, this man.

Tseyero yuur yar ledo. Aruruyeł ronten no-tsidedatł, itłak,
And-so there in-the-house he-stays. And-then suddenly we-came-back, it-is-heard,

yur tłĭ̆tĕyĭ̆ rotsen. Aruruyeł no'otse ronten ido-no-tsodedeł, torun
there outside from. And-then from-there suddenly we-are-coming-in-again, while

yar ledo. Aruruyeł yaka korokootsen ido-na-rad'olen,
in-the-house he-stays. And-then that (one) ahead who-comes-back-in,

eiten te-deni: "Masemake, ke-no-rélnihtł," ni. Tseyerotse ko
he says: "Boots, cook-something," he-says. And-so the

masemake to-letloye no-rédatł, tseyero ketł a-na-atłnik, tseyero
boots that-are-up came-down, and-so food they-cooked, and-so

yi-no-kereid'on. Ro yeł keré'on ko niyonen. Tseyerotsen tłi niyo.
they-ate-again. Them with he-ate the newcomer. And-then out he-went.

Tuur rŏzŏn loset dadletłé. Tseyerotsen ido-na-rad'oł torun te-deni:
There though horses are-standing. And-so in-he-comes-back while he-says:

"Masemake, klĕ̆rō tasi ne tse kĕtsŏt-ĕgĕ̆'ĭlă; ne tse
"Boots, in-real-truth you towards (coming) I-had-a-hard-time; you to (coming)

tasi kléro ketsot-ege'ila," yełni. "Kĕn rŏn?" yełni.
indeed truly I-had-a-hard-time," he-says-to-him. "What for?" he-says-to-him.

"Toyon mor lesdonen: 'Yuur ti'oih,' selni, ta-rar'ana ne
"A-rich-man with-whom I-live: 'Thither go,' he-says-to-me, wherefore you

tse tales'o," yełni. Tseyerotsen ko kon masemake to-letloye no-rédatł.
to I-came," he-says-to-him. And-so the here boots that-are-up came-down.

Aruruyeł: "Oné," yełni (ei masemake te-yełnitsen). Tseyerotse yur
And-then: "Come," he-says-to-him (the boots saying-to-him). And-so some

korora'an yar ye kootsen ido-niyo. Tseyerotset yutaka ye kootse to-ledatł.
apart house him ahead-of he-entered. And-so upstairs him ahead-of he-went-up.

Tseyerotse kon ledo ko niyonen. Aruruyeł yutoko rotse ko-idedał,
And-so here he-stays the newcomer. And-then above from he-walks,

itłak, ko masemake. Aruruyeł kon ma kala. Mălŏrŏt me yi
it-is-heard, the boots. And-then here him no-more. A-steamer it in

rodalkone kon no-réral. Tseyerotse ye yi réyo. Tseyerotse ko ten'a
there-is-fire here has-come-down. And-so it in he-went. And-so the men

tetłekna ye yi rédatł, tetłektsen ra ye yi rédatł. Tseyerotse tłi rayiniton.
all it in went, entirely they it in went. And-so out they-brought-it.

Aruruyeł ta-rayełni, ko niyonen ta-aradeni: "Nedatsetsen yininlen,"
And-then they-say-to-him, the newcomer they-say-to: "Whithersoever you-wish,"

rayełni, ko ten'a. Kĕlĕlĕttĕn, eit to-lyo: letān toruno
they-say-to-him, this man. The-steering-place, there he-went-up: he-lies-down while

kĕtłĕt, ko ten'a. Torun masemake ketł a-na-ralnihtł. Kota, ketatłlet
he-steers, this man. Meanwhile the-boots food he-cooks. Now, he-is-steering

ko niyonen. Kun me tsĕn rulan, notortł, ko malorot. Torun
the newcomer. Also its wings there-are, it-flies, that steamer. Meanwhile

kon ko ten'a kełlet, letan toruno: kota toyon a-ltlat.
here this man steers, he-lies-down whilst: now a-boss he-is-become.

Kełlet, tseyerotset ayu malorot notortł; torun kełlet, torun me
He-steers, and-then there the-steamer flies; meanwhile he-steers, meanwhile it

yi rodalkon. Notortł, notortł, notortł, oda, notortł, notortł, notortł.
in there-is-fire. It-flies, flies, flies, all-along, it-flies, flies, flies.

Aruruyeł yuur ronten toyon ra'oł. Tseyerotse malorot no-réral.
And-then there suddenly a-rich-man walks. And-so the-steamboat came-down.

Tseyerotse ko kełleten, ko masemake yoro toyon a-kerél'on. Aruruyeł
And-so the steersman, the boots for-him the-rich-man fed. And-then

te-yełni: "ădzĕkĕ! to-rurŏlezŭntse tĕ-tănnă! Ko ken
he-says-to-him: "Wonderful! how-nicely (these-people) are-doing! This what

tĭłrŏ te-tsular? Ko tsa-ate me-tō-rosnoye bĕkĕltłălā me
in-exchange-of shall-we-get? This very-last by-which-I-live axe it

tiłro ne tlo-rus'oł?" ko kełleten ałni. "O'o,"
in-exchange-for you I-will-give-to?" this steersman he-says-to. "Yes,"

yełni. Tseyerotset malorot yi yeré'on, ko bekeltłala. Tseyerotse
he-said-to-him. And-so the-steamer in he-put-it, this axe. And-so

masemake yuneka toyon yerełzuk. Tseyerotse masemake malorot
the-boots landward the-boss he-took-them. And-so the-boots the-steamer

yi kala. "Tema ketł a-no-tołnihtł?" yinilen. Tse oda, oda,
in no-more. "Who food shall-cook?" he-thinks. And all-the-time, always,

raroł, notortł, ko malorot. Tseyerotset dzan nidzet ni-koroł. Aruruyeł
it-goes, it-flies, that steamer. And-so day middle-of it-stops. And-then

ronten te-yinilen ko kełleten: "Ken-é soro ketł
suddenly he-thinks the steersman: "What-is-this for-me food

a-no-tołnihtłte kun tĕslŏrtsĕn?" yudeni, ko masemake
the-one-who-would-cook and that-I-did-to-him?" he-thinks-him, the boots

udeni. Aruruyeł yur tsei-dōkōkă rotsen ra-kedałlokŭt.
he-thinks. And-then some-where on-the-deck from (comes) the-noise-of-steps.

Aruruyeł tuur tsei-yi ronten ko-no-tałledatł, oda, kota.
And-then there in-the-boat suddenly they-began-to-walk, all-along, now.

Tseyerotse, raroł, notortł; oda notortł, notortł. Aruruyeł tuur ronten
And-so, it-goes, it-flies; always it-flies, flies. And-then there suddenly

toyon. Aruruyeł toyon ro no-rérał. Tseyerotse malorot
a-rich-man. And-then the-rich-man to it-came-down. And-then the-steamer

yi réyo, ko toyon. Tseyerotse ko masemake toyon oro ketł
in he-went, this rich-man. And-then the boots the-rich-man for food

a-na-atłnik, tseyerot ko toyon a-keréł'on. Tseyerot ko toyon
cooked, and-so this rich-man fed. And-so this rich-man

te-deni: "Ărtĕ! ădzĕkĕ! ken tiłro te-tsular é?"
says: "Oh! oh! wonderful! what in-exchange-for shall-we-get-it?"

yedetałni. "Ko zŏldă tāstŭtł ko-denauestihe me tiłro
he-began-to-say-of-it. "This gold cane which-I-carry him in-exchange-for

ne tlo-duruston tsă-rădéné?" yełni, ko kełleten ałni.
you I-will-give-to can-it-be?" he-says-to-him, the steersman he-says-to.

"O'o," yełni. Tseyerotset kota toyon yuneko to-no-łleyo.
"Yes," he-says-to-him. And-so now the-rich-man landward went-back-up.

Tseyerotset ko masemake kun rełzuk ko toyon. Tseyerotse ko kełleten
And-so the boots also he-took this rich-man. And-so the steersman

eiten ko zolda tastŭtł eite toko yatsen-ketatłtōtł. Aruruyeł nuur
he the gold cane it on-top-of unscrewed-something. And-then there

ronten tsei yi ronten ten'a rulân, ko zolda yi rŏtănă.
suddenly the-boat in suddenly people there-are, that gold in the-people-of.

Tse ko eina ketł a-no-tatłnik. Tseyero kota no-tałlerał, tse oda,
And the these food cooked. And-so then it-started-again, and always,

oda, na-radoroł, na-radoroł. Tse dzan-nidzet ni-no-kodoroł. Aruruyeł
always, it-goes-back, it-goes-back. And at-midday it-stopped-again. And-then

te-yinilen ko kełleten: "To-eslor kunun soro ketł
he-thinks the steersman: "What-have-I-done again (with) for-me food

a-na-rałnihtłe? rotlo-taleslo!" yinilen. Tseyerotset ayu na-radoroł.
the-one-who-cooks? I-sold-him!" he-thinks. And-so there it-goes-back.

Aruruyeł yuura keréhtaa tsei-dokoka, aru rotsen ra-kedałlokŭt.
And-then somewhere on-the-gunwale on-the-deck, there from the-noise-of-steps-comes.

Aruruyeł tuur tsei yi ronten ko-no-tałledatł ko masemake.
And-then there the-boat in suddenly they-are-walking those boots.

Tseyerotsen ko zolda tastŭtł, eite toko yatsen-no-ketatłtotł,
And-so the gold cane, this on-top-of he-unscrewed-something,

tseyerotsen ra ye yi no-rodidenik, tseyero kot masemake yan ketł
and-so they it in all-disappeared, and-so now the-boots only food

a-no-no-tatłnik. Ten'a nelan, iru, inte rayenił'ana. Tse
begin-again-to-cook. A-man it-is, although, but they-see-him-not. And

yuur na-radoroł. Aruruyel kota, te yar no-natok,
there it-is-going-back. And-then at-last, his house it-flew-back-to,

no-idarał, ko malorot. Aruruyeł toneko me yar, mo'-ot
it-came-back-to, this steamer. And-then inland his house, his-wife

tan yar ledoten, ronten nōnĭlĕrŏză rŏtłĭrŏ dĕnădlĕrōs,
as-he-knows at-home where-she-is, wonder lead on-top-of-it has-been-melted,

tseyero me yar rokala. Tseyerotsen ko toyon yan yet ro'ote ledo,
and-so his house there-is-not. And-so the boss only there near-by stays,

ro'otor ledo. Tseyerotsen ko bekeltłala dza ni'on. Tseyerotsen
near-by he-stays. And-so the axe out he-brought. And-so

yetatłtotł. Aruruyeł bekeltłala lon; tseyerotse oden zīt
he-unscrewed-it. And-then axes very-many; and-so by-themselves

mara rotałletłatł ko nonileroza. Tse kōt zolda tastütł
by-them it-is-being-chopped that lead. And now (the) gold cane

tā-te-yilor. Aruruyeł ronten me yi ten'a lon. Tseyerotse ta-raldatł,
he-turned-thus. And-then suddenly it in people many. And-so they-went-ashore,

tseyerotsen nonekot, yet ko nonileroza rotłiro denadlerosten, eit
and-so inland, there the lead on-top where-it-has-been-cast, there

tetłektse yerotsen bekeltłala ara rŏrŏtłāł. Tse kot bekeltlala
all thus the-axes by-means-of they-chop. And then the-axes

oden-zit tā-te-tan. Tseyero kota nonileroza kălă, ro ko yar
by-themselves were-doing-so. And-so now lead no-more, that this house

tetłektsen rorotatłtłatł; tseyerotsen ko yar rŏnŏrŭłyīt ronten! mo'-ot
entirely is-chopped-free; and-so the house inside-of oh! his-wife

răn̆ătłkŭn; kĕł'ŏnă. Toyon yet ledonen eiten te-yełni: "Noneko,
is-dried-up; she-eats-not. The-boss there who-stays he says-to-him: "Inland,

tasi, no'-ot: 'Nĭrŭtłkūt,' misni, iru; inte tsŏrŭ-tĕdĕnĭgă
as-I-know, your-wife: 'Let-me-take-you,' I-say-to-her, in-vain; but she-is-unwilling

ta-rar'ana tasi ŏlŏră me tłiro denaletłrōs," yełni, ko kełleten
wherefore indeed lead her on-top-of I-melted," he-says-to-him, the steersman

ałni. Eiten noroł rolenek. Tseyerotsen ko ronten! ranatłkŭn;
he-says-to. Him to he-tells. And-so there oh! she-is-dried-up;

keł'ona, tseyero ranatłkun, tĕtłĕktsĕ yĕrŏtsĕn. Tseyerotsen tsei
she-eats-not, and-so she-is-dried-up, all thus. And-so the-boat

yi yerełtan, tseyerotset ra ye diloya tetłeka, ko toyon yor
in he-put-her, and-so they her things all, the boss from-her

rełzuke, eite na-rarełzuk, tse ko toyon kun rarełzuk, tetłektsen,
which-he-took, these they-took-back, and the boss also they-took, entirely,

ra yo-'ot yeł, ra ye diloya yeł kerełzuk, ko tastŭł yi rotana
they his-wife too, they his things too took-together, the cane in inhabitants

anta-ko te-tanna. Tseyerotsen yar rurutłsin, ko tastŭtł yi rotana, yar
it-were who-did-so. And-so houses they-built, the cane in inhabitants, houses

rozuu rororeiron. Eit yar raditadletl̨é. Tseyerotse masemake
fine they-built. (In) these houses they-began-to-stay. And-then the-boots

ketł a-na-ralnihtł tso-royăn, tseyerotsen nilkaatsen diloy oko
food is-cooking always, and-so in-all-directions things in-quest-of

no-tałleroihtł, ko malorot. Tseyerotsaralte toyon a-ltlat ko kełleten.
it-began-to-travel, that steamer. And-so-then a-rich-man he-became that steersman.

Tseyerotsaralte rā-nŏ-kĕdĕlăr, ko toyon rĕlă'ăn, ko ra ye diloya
And-so-then he-sweeps, the rich-man one-who-was, the they his (whose) things

rélzuken; ra-no-kedelar to-rŏkŏŏtsĕnă kĕtāl'ōn. Kŏtă, ra-no-kedelar
they-have-taken; he-sweeps which-for he-eats. Now, he-sweeps

tso-royan, kŭn atlăł tsŏ-royĕł; ra-no-kedelar tso-royeł, to-rokootsena kota
all-the-time, firewood he-chops also; he-sweeps also, for-which now

ketal'on tsŏ-rŏyăn. Kota ra-no-kedelar to-rokootsena ketal'on, ko toyon
he-eats only. Now he-sweeps which-for he-eats, the boss

réla'an. Kota. Roih ron naletłkŭs.
he-who-was. The-end. Winter a-part-of I-chewed-away.

THE POOR YOUNG MAN.

In a certain place there lived a rich man, and near to him a poor young man who used to work for his rich neighbour. This young man had a good wife, and the rich man coveted her and said to him, "Give me that wife of yours." "No," said the poor boy, "you can't have her." And he refused to part with her. Then the other said to him, "Will you dare go to the devil's cavern?" "I will," he answered, "if you lend me your sword." "Yes," said the rich man, "you can have it." And the poor fellow started on his expedition. He was going, going on. He came to a high mountain, a huge mass of rocks, and there struck the headwaters of a creek. These lay between two steep walls of rock, which encased the stream, and in this narrow passage he went. The rocks formed a projection overhead, and from this long rope-like things were hanging down and twisting upwards and downwards (in a continuous motion). Notwithstanding this he was going, going, going along. The further he proceeded the more dreadfully these rope-like things twisted and twirled; still he went on, following the course of the stream.

Then he stopped and looked around him. He was in a kettle-shaped cave, the bottom of which was covered with boiling water; from this large bubbles were constantly coming forth. Looking up, he saw stretching above his head a huge jaw; and looking down he saw another enormous jaw beneath him. Then he realized that he had put himself in the very mouth of a devil; he had gone into it unawares. He was deep in it, close to the throat, where the boiling water was

bubbling up. The long and twisting ropes were appendages of the devil's jaw, and now they began to encircle him and closed fast upon him. But he drew his sword and cut them. Then he ran out of the dreadful cave. Before going, as he saw the big teeth on the monster's jaw, he pulled out one of them and took it with him. After this he went back to his home. And he gave the devil's tooth to his master, and he also gave him back the sword.

During this time his wife had remained alone at home. But now her husband had returned. The night came, and that evening she related to him what had happened during his absence. "The rich man came to me in this house," she said "and he asked me to be his wife, but I would not." Thus did she tell her husband; however, he answered not a word.

After this the young man stayed at home for a long, long while. But a second time the rich man came to him and said, "Will you be bold enough to go to the nest of the man-eagle?" "I will," said the youth, "if you lend me your gun." "Yes," said the other, "you shall have it." And he went to his house to fetch the gun, and he handed it to the boy. This one also took a small pouch of cartridges, his own property, and his blanket, and off he went. He was walking, walking, and packing, packing the gun.

He came to a high mountain, and around the base of it he walked for a long time. Then he saw straight above the place where he stood, on the edge of a plateau, two high spruce trees (close to each other), and at the very top of these, there was the eagle's nest. Up the mountain he climbed to the foot of the trees, and up the trees he climbed until he reached the nest. Then passing his gun along the edge of the nest (so that the muzzle was just above it), he waited. There were two young eagles in the nest, to whom he spoke from his hiding place (or, after having settled himself in position), and said to the elder one, a young male, "Where are your father and your mother?" "My father and my mother," said the young eagle, "are gone to hunt for deer." "When your mother comes back to the eyrie," said the lad, "what happens then?" "When my mother comes back," said the eaglet, "a wet snow falls through the air." "And your father what happens when he comes back?" "Then hailstones fall all around." "Very, well," said the young man. And so much he learned from the male eaglet.

And while they all remained there waiting, he said to the young eagles, "Take care not to tell about me. If you let your parents know that I am here, I will kill you," said he. Then there fell a little wet snow, and he waited, and the mother eagle came back to her eyrie. In the claws of the one foot she carried young deer, one in each claw; in the one claw a young deer; in the other, a young deer; in the other a young deer, and so on. But in the claws of the other foot she carried men, one in the first claw, one in the next, and one in the next, and so on. All these she placed on the edge of the eyrie. Then she tore out the bowels of the men and gave them to her young, while she stood near to them. Just then the young man fired and killed her. Then he pushed off her body and it fell down to the ground. The deer and the men she had brought he also cast down, and settled

himself in position to wait again. "Let neither of you," he said to the eaglets, "let neither of you mention my presence to your father." And he lay in wait.

Then there came a shower of hailstones; the male eagle was flying back. He alighted on the eyrie's edge and said to his young, "Where is your mother? She left before I did, and hasn't she come back yet?" But they answered, "No, our mother is not yet back." "Where can she be?" said they. "Not yet back? How can that be?" said the eagle. They said, "Indeed she is not here." He also was carrying young deer in his claws, on one side, a young deer to each claw; and men on the other side, a man in each claw. But he threw these down on the ground, and screamed, and began to claw the air at the eyrie's edge. Then the young man fired again and shot him dead. And he left the young eagles, sparing their lives, and went down the tree. He cut off the feet of the two eagles which he had killed, and with these he started back for his home. And after reaching the place, he gave back the gun to his master, and he gave him also the eagle's feet that he had brought.

He remained at home for a long, long time. But the master again came to him and said, "Will you go to find where some village lies?" "Yes," said he. And having taken bundles of dried fish, salmon and silver salmon, which he "packed" on his shoulders, the young man went. He went, went, went, packing, packing, packing. When he had walked for days after days, the sun began to grow warmer, and the snow began to thaw in the daytime under the heat of the sun. Still, he was going. He was exhausted. His supply of dried salmon gave out, and he lived on the grouse which he killed every day. He was hungry. Night after night he camped, and day after day he walked, till he came to the sea coast.

There at last he saw the village, and towards it he directed his course. He reached it after a long, long walk, and he entered into a house. There was nobody, not a soul. He began to walk to and fro in the house. On a shelf on the inland side he noticed a pair of boots. The place under and behind them was covered with silver. There was a trunk on the floor, and behind it a small space, into which he crept. There he lay down to die, as he thought. He was exhausted, emaciated, from his prolonged fasting; and there he was, lying down.

Suddenly there was a noise of a number of people coming back to the house. And the one who was first to enter, said aloud, "Boots, get us a meal." Then the boots came down from the shelf, and went to the stove on the opposite side, and made a fire, and began to prepare the meal. It was not long before everything was ready and the table set by the boots. The crowd took their meal in haste and departed. Then the newcomer crept out of his hiding place, and went out of the house to look around. He saw them scattering in all directions, every one on horseback. Then he entered the house again, and he addressed the boots, saying, "Boots, get me something to eat." Whereupon the boots jumped down and prepared a meal, and gave him to eat. And after having washed the dishes, they went back to the silver-lined shelf where they lay, whilst

he returned to his hiding place behind the box. Again the inmates of the place came, and again they ate, the boots cooking for them. And then they went to sleep for the night.

The next morning, the first one to wake up called to the boots, "Boots, prepare the meal." Down came the boots, and they had their breakfast, immediately after getting up. And off they went. The newcomer came out, too, and said, "Boots, give me a meal." And so they did. After eating he remained in the house, and when the others came back and sat down to their meal as usual, he stayed among them and ate with them. And going out he saw a number of horses standing. Then he entered again, and he said to the boots, "Boots, I have had a very hard time on my way to your place, a very hard time indeed." The boots said to him, "What prompted you to come?" He answered, "I came because the master with whom I stay told me to do so." Then the boots said to him, "Follow me." And he followed the boots into the neighbouring house. There the boots mounted the stairs, but he remained below. He heard them walking overhead, and then the noise stopped.

Suddenly a steamer came down from the sky. He went aboard, and the whole band went aboard with him. And they made ready to go. Then they said to him, "Whithersoever you wish, go." So he went up to the pilot house, and he began to steer. He was comfortably stretched on a couch, and steered. The boots did the cooking. The steamer was a flying machine, it had wings. And the newcomer became its pilot (and captain); now he was a powerful man. The steamer, flying, steaming, went where he wanted, and onwards, onwards it flew.

Thus they came to a place where a rich man was passing. The steamer went down and stopped, and the boots prepared a meal for this man, as they were directed by the new captain. Then this rich man exclaimed, "Oh, the wonderful thing! How lucky these people are! What can I give in exchange for these boots? Will you accept my axe, the thing with which I make my living?" "Yes," said the captain. And the man gave him the axe, and went away with the boots. And, while the airship went its way, the captain felt sorry, "Who will cook the meals now?" he thought. And the ship was going, going, flying along. At midday it stopped. And the captain began to say to himself, "What have I done with my cook?" And as he thought so, a noise of steps was heard on the deck, the boots were there, walking about. And the airship resumed its course.

Again it came across a rich man passing by, and came down towards him and stopped. This rich man came aboard, and the boots prepared a meal and served it to him. He exclaimed, "Oh, what a wonder! What can I give in exchange for this? Will you take this gold cane which I am using?" "Yes," said the steersman. And the rich man went away with the boots. But the steersman unscrewed the upper end of the gold cane, and out of it came a multitude of people; they filled the whole ship, and they took charge of the cooking. The airship went on, flying back towards the poor boy's home. At midday it stopped again, and the captain thought, "Oh, what have I done with my cook? Why did

I sell him?" Instantly a noise of steps came from the deck, and there were the boots going around. Seeing them, he unscrewed the end of the gold cane, and back into it the whole crowd that had come out disappeared. The boots resumed the charge of the galley. It was a man, but invisible. And the ship was going.

At last it came to the house of the poor young man, now master of the ship. What was his surprise to find that the house had disappeared under a mass of lead, which had been melted and poured over it. His former master was still living close by. He took out the axe and unscrewed it, and a multitude of axes came out, and began to move by themselves, no one handling them, and to chop out the mound of lead. Then he unscrewed the gold cane, and the people came out from it and went up the bank, and got hold of the axes and set to work chopping off the lead. It was soon cleared away, and in the house they found his wife, almost reduced to a skeleton, starved. Then his former master said to him, "I proposed to your wife and she wouldn't accept me, that is why I buried her under the molten lead." Thus he confessed his crime. They took the unfortunate woman to the ship, almost dead from her long starvation, and they took back all her property which the rich man had stolen. Then they took him also, with his wife and property. It was the people from the cane who did this.

And these same people built some fine houses, where they established themselves. The boots were continually employed in cooking; the airship was used to travel around and bring the necessary supplies to the new village, and the steersman became a mighty ruler. As for his former master, he was reduced to sweep for his living; he was sweeping for his board, nothing else. He swept, and swept, and all he ever got for his sweeping was his food. Thus, he who had been a rich man, became a poor sweeper.

I have chewed away a part of the winter.

NOTES.

This story is presented by natives as a Russian tale, and it contains many evidences of a foreign origin. It is not unlikely, however, that, especially in the first part of it, there should be an admixture of native elements. The style is loose and lengthy, with numerous useless repetitions, features which are by no means uncommon in the folk-lore of the lower tribes. The dialect may be considered as a fair example of the language spoken at Nulato, a blend of the two dialects, using words and expressions from both.

"tōyōn," a rich man, an influential person, a "boss," a chief. See the notes on III.

"to-'ot rŏ nĕtsĕn," he keeps his wife for himself.

"tłā yīt dza no-to-kărăltār razeniten," the place where devils are said to jump out from the rock into the water. We would call it the Devils' cave. The devils are denoted here by the impersonal indefinite pronoun "ke" combined with the root "tar," expressing the swift motien of a live being. The word used by the Ten'a to designate their devils, nĕkĕdzăltără, is composed of the

same two essential elements, with some accidental ones. The Ten'a devil is corporeal, though endowed with all the other properties of evil spirits, such as instantaneous motion, knowledge of distant things, etc.

"me-ten'a-ītlŏrtla," sword. The word is genuine Ten'a, made probably in recent times, and expresses a man-cutter, a thing wherewith to cut people.

"rŏntōna," a projection, viz., of the rock; from the preposition "nton" or "neton," projecting over.

"bĭlōrka," rope; a word adopted from the Russian. Those rope-like things are said to be plants growing in the forests, which will entwine a man and kill him.

"no-kedzĕstł-rōlał," large bubbles are coming up. The word "kedzestł" implies that the bubbles are about the size of a man's fist.

"nĕkĕdzăltără," devil. See above.

"nărălnīha," raw hide; the native rope. It is made of the moose-skin, wet, cut in long strips and then stretched to dry.

"mo rŭ," its teeth. The upper dialect word; the lower one has "lotlo'o."

"to-kŭn kātlo," in place of her husband, *i.e.*, she occupies the house in his absence.

"tāsĭ," you know, or I know; it is sure, etc. The lower dialect uses "istan."

"īnlān," the Indicative Present, in the second person, serves as an Imperative.

"tān," has practically the same meaning as "tasi," "istan."

"tĕltŭdla," the proper word for gun, from the root "tŭtł," to make a loud noise.

"kedōtła," bullet. Also a genuine Ten'a word, though of recent manufacture, meaning, literally "a cut piece." The bullets were supposed by natives to be manufactured by cutting a bar of lead in pieces.

"lĕł," sack, lit. skin; the term is applied to any sheath or casing made of skin or flexible matter. "Kedotla" being also used, by extension, to mean the whole cartridge and "łeł," meaning a belt, the term "kedotła leł" may as well signify a cartridge-belt.

"yetāne," which he has, *i.e.*, his own property.

"ko-īraih," he "packs," *i.e.*, he carries in a bundle on his shoulders.

"yedenāltlĭh ko teltŭdla," he thrust it, the gun. This repetition of the object is a lower dialect turn. The root "tlaih" ("tlih," "tlihtł"), expresses the stretching of some stiff object in a certain direction.

"ma-kădo," upon it, viz., the nest. We would rather say "in it."

"ko yur to-lyote." As the Ten'a uses the same forms for time and place, this phrase is referable to either, and may mean "as soon as he had settled himself there," or "from the place where he had settled himself."

"kéla," male, lit. a young male. The same word used for human beings means a youth, a lad, a young man, as we see that the hero of this story is styled: "kél" (for "kéla,") "yokala."

"rō nōn yeł, rō ne-tō yeł, rōdé?" where are your father and your mother? It should be noticed that the demonstratives "ro, rodé," carry no interrogation with them, but simply mean "that" or "there." In constructions like these, however, they have, by custom, the force of an interrogative.

"an ko-ranātor," they are hunting, lit. they are flying on the hunt. The idea of hunting is conveyed by the prefixes "an ko"; that of flying, by the root "tor."

"kentłūka," wet, lit. slushy.

"ne-tětnăka," thy parents. This singular with the plural verb seems abnormal, and one would rather expect: "yor-tełnaka," your parents. It is not common in Ten'a.

"ma kālekŭna tor," in her claws. The adverb "tor" is distributive. It is remarkable that the narrator repeating his phrase five times (pointing at each time to one of his fingers) assumes that the eagle has five claws. I remarked to him that he was putting too many, but he simply smiled disdainfully at my observation and proceeded to the other similar enumerations. Perhaps the man-eagle has five toes!

"eina kōn," the bowels of these, lit. the bellies.

"ketłtŭł," he fired his gun. The verb has been deftly made, as the name "teltŭdla," gun, from the native root: "tŭtł," to make a loud noise.

"nĕł-e kă'ăna," both of you, or rather, either of you.

"nedĕn," for "nedān," no; most commonly used by children.

"ranāleta," one to each. A special verb to convey this idea.

"kāyar rūl'on tsedeniten," where it is said that there is a village. The phrase is very obscure, and seems to imply that a village was to them an extraordinary thing.

"nulār tsĕdza yeł larān yeł," dried salmon and (dried) silver-salmon. About the species of salmon see notes on IV.

"ăłă'ōna," the black grouse, or Canada grouse (*Canachites canadensis*, and *C. Franklini*, of naturalists). The common word is "toledoya," "the sitter," alluding to the obstinate persistency with which it remains undisturbed on its perch. The term "ała'ona, the spruce-eater," reminds one of the name also used for it by the whites, "spruce-partridge."

"tokŭrbāra," the sea-coast, lit. the edge of the big water.

"yet īdo nīyo," he went in, viz., into a house, as the prefix "ido," indicates.

"măsĕmăkĕ," boots. The word is borrowed from the Russian and applies only to white men's shoes, leather boots, rubber boots. The native shoes are termed "kākĕna, kātsŭł," etc.

"dīnka," silver. A term introduced from the Russian, and commonly used for "money."

"tā-to-rūta ru," in a place like this. The phrase was accompanied by a gesture describing the narrowness of the place.

"yāsĕk," box. Word borrowed from the Russian.

"kĕł'ōna tŏkŏdĕkūn ranātłkŭn," he does not eat because he is very thin: it seems that the consequence should be reversed, but the phrase is probably to be understood: he does not eat, he has been without food for a long time (this is clear), because he is very thin.

"bĕlīdă, stove." From the Russian.

"stōl kătsen," on the table. "Stol, stola," table, another Russian word that has passed into the language.

"lōsĕt," horse. Again a Russian term.

"yutaka," upstairs, lit. up. The native adverb, now understood to mean the upper story.

"mălŏrŏt," steamer. From the Russian.

"lĕtān tŏrūno kĕtlĕt," he steers whilst lying bown, *i.e.*, very comfortably.

"bekeltłāla," a genuine Ten'a word, probably applied to the stone-axe before the Russian times. The upper dialect has also "tłātłī."

"tsēī dŏkōkă," the deck, lit. the covering of the boat. A Ten'a expression.

"ărté," sometimes pronounced "akté," an interjection of surprise, proper to the lower dialect, and said to be of Russian origin.

"zōldă," gold; from the Russian.

"tāstŭtł," cane. The true meaning is "a pole," viz., used for "poling" boats against the stream; the word is genuine Ten'a.

"yātsen ketātłtōtł," unscrewed, lit. "turned the other way."

"nonīlrŏza," lead. A Ten'a word from the verb "netłrōs," to melt; it denotes "the thing that is melted, that can be melted."

"tā-te-yīlor," he turned thus; the phrase being accompanied by a gesture of unscrewing.

"tā te-tān," are doing thus. Another gesture, showing a chopping motion.

"olōra," lead. This term is given as the Russian equivalent of "nonilroza."

"ra-no-kedelar," he sweeps. The practice was known to the Ten'a before the coming of the whites. It was done with a bunch of branches.

The story was written under the dictation of Ambrose Tsenokoleyala, a native of Tatsenibanten, some eighteen miles below Nulato, assisted by Andrew Keniyo of Tsenoketlarten, on the Koyukuk River. The narrator lives at Nulato, and speaks the language of the place.

THE CANOES OF THE BRITISH SOLOMON ISLANDS.

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Local Correspondent of the Royal Anthropological Institute.

[With Plates XL—XLVI.]

The beauty of the Solomon Island canoes has excited the admiration of all voyagers from the time the islands were first visited by white men. Alvaro de Mendaña, the first discoverer, who visited the islands in 1568, says, "Their canoes are very well made and very light; they are shaped like a crescent, the largest holding about thirty persons. They are so swift that, although our ships under sail started two leagues ahead of them, with a good wind and all the sails set, they caught us up within the hour. Their speed in rowing is marvellous; they row in the fashion of the people of Cartagena."[1]

Carteret, in 1767, seized a canoe off the north-west end of Malaita, which he describes as follows: "The canoe or boat was large enough to carry eight or ten men, and was very neatly built, with planks well jointed: it was adorned with shell work, and figures rudely painted; and the seams were covered with a substance somewhat like our black putty, but it appeared to be of a better consistence."[2]

Monsieur de Bougainville, in 1768, thus describes two canoes taken by him at Choiseul Bay. "Two of their canoes were taken, which are long, and well built, and very high at each end, so that by turning either towards the enemy, they obtained shelter from their arrows. On the forepart of one of these canoes, was the head of a man carved; the eyes were of mother-of-pearl, the ears of tortoise-shell, the lips were stained of a very bright scarlet, and the whole had the appearance of a mask, with a very long beard."[3]

Surville, in 1769, describes the canoes met with by him at Port Praslin on Ysabel Island as follows:—

"The canoes of these islanders are constructed with great good sense, and finished with much skill: they are not formed of a trunk of a tree, made hollow by stone implements or fire, as those of many savage nations are, but are made of

[1] *The Discovery of the Solomon Islands by Alvaro de Mendaña in* 1568. Hakluyt Soc., 1901, p. 109.

[2] *Discoveries of the French to the South-East of New Guinea.* Translated from the French, p. 68. Stockdale, London, 1791.

[3] *Discoveries of the French*, p. 94.

pieces put together. In the small canoes the planks are not more than a third of an inch in thickness, and in working them they form on the inside a kind of loops, which at intervals are tied strongly with rattan to ribs of wood, bent in the shape of the boat, and serving as its frame; nor are the planks held together by any other means; the joints are stopped with a black mastic, tolerably hard, which renders these frail vessels impenetrable to the water. The prow and stern are raised very high, apparently for the purpose of defending the warriors in them from arrows, by presenting either end to the enemy: and in general they are ornamented with pieces of mother-of-pearl, forming different designs, and applied with mastic. . . . One was seen 56 feet long by 3½ feet broad."[1]

Lieutenant Shortland, during his voyage from Botany Bay to Batavia in the *Friendship* and *Alexander* in 1788, remarks upon the canoes which visited his ship off the island of Simbo: "Their canoes, which contain from six to fourteen men, seemed to be well put together, the bows and sterns very lofty, carved with various figures, and stained with a kind of red paint."[2]

M. Labillardiere in his account of the *Voyage in Search of La Pérouse*, gives an illustration of a canoe which visited the *Recherche* off the island of Ulawa, and remarked, "We admired the elegant form of their canoes, which were exactly similar to those we had seen the preceding days at the easterly part of the Arsacides. They were about twenty-one feet in length, two in breadth, and fifteen inches in depth. The bottom consisted of a single piece cut from the trunk of a tree, and the sides were formed of a plank, the whole length of the boat, supported by beams fixed at equal distances into the bottom: at both ends other planks were attached to the first. These were ornamented on the outside with figures of birds, fishes, etc., rudely carved. The greater part of the canoes were terminated in front with the head of a bird, under which was seen a large bunch of fringe coloured with a red dye, which appeared to me to have been made of the leaves of the vacoua. The other extremity of the boat was likewise ornamented with red fringe, and here we frequently observed, in the inner side, the carving of a dog projecting from the vessel, which led me to suppose that the savages possess this animal. I was surprised to observe that they had given it nearly the form of a bloodhound; though it is probable that they do not possess that species, but that the carving was nothing more than an imperfect representation of the dog usually met with in the South Sea Islands."[3]

Lastly, Brenchley in *Cruise of H.M.S. "Curaçoa"* in 1865 refers to the canoes of Ulawa Island and to the lightness and swiftness of the canoes seen by him at Florida Island.[4]

[1] *Discoveries of the French*, p. 139.

[2] *Voyage of Governor Philip to Botany Bay.* London, Stockdale, 1789, p. 198.

[3] *Voyage in Search of La Pérouse*, by Monsieur Labillardiere. Translated from the French London, Stockdale, 1800. Vol. ii, p. 277.

[4] *Cruise of H.M.S. "Curaçoa" in* 1865, by Julius Brenchley. London, Longmans, 1873, pp. 249, 279.

I propose in the following paper to give some account of these canoes and of the method of their construction, together with the native names of the various parts. It will be observed that the names for the separate parts of the canoes differ in each locality and even in places so near to one another as New Georgia and Vekavekala, but the scope of the present paper does not permit me to enter upon the subject of Solomon Island languages.

This particular type of built-up canoe appears to be peculiar altogether to the Melanesian inhabitants of the British Solomons.

In the German Islands of Bougainville and Bouka to the north-west, the type of dug-out canoe with the outrigger is observed, and the same type of canoe occurs in the Santa Cruz Group and in the New Hebrides to the south-east.

It is comparatively easy to determine at a glance the place of origin of one of these Solomon Island canoes, since the shape and scheme of ornamentation differ on the various islands.

For accuracy and neatness in construction I am inclined to award the palm to the canoes of the Shortland group in the Bougainville Straits, while for beauty of line and exterior decorations the large *tomako* or head-hunting canoe of the New Georgia group unquestionably excels.

It is difficult to understand how the natives were able, before they became acquainted with iron tools, to adze down the canoe planks to the requisite degree of thinness and shape them with the aid only of stone implements, but it appears from the descriptions above quoted that they undoubtedly did so, and that the canoes have changed but little in type since the days of Mendaña.

The plane iron, fitted into a handle of similar form to that previously used for the stone implement, is now universally used in cutting and shaping the planks; the expertness of the canoe builders in the use of this tool is marvellous; they will follow a curved or wavy line or cut out a concave surface with the greatest accuracy.

A plan is first drawn down on wood by an expert canoe designer, to which the builders work.

In most places, except on Malaita, a central ridge is left along the centre of each plank; this adds to the strength of the canoe.

In the Malaita canoes the planks are thicker and do not require the added strength of a central ridge.

In addition to the central ridge along the planks a projecting boss is left at the places where the planks meet the timbers. The planks are lashed to the timbers with strips of fibre which pass through holes drilled in the projecting bosses.

Surville is incorrect in stating that the ribs or timbers are of bent wood. On the contrary the timbers are either naturally grown or shaped from the solid, as will appear from the illustrations given.

The planks, after being roughly adzed out, are lashed tightly together, the

corresponding planks from each side of the future canoe, outsides together, and placed in the canoe houses to season before being finally assembled.

In building, the edge of each plank is accurately fitted to that next to it. Holes are bored at about two inches interval along the edges of each plank, corresponding with similar holes in the adjoining plank and a separate lashing of fibre, very neatly fastened, is made at each pair of opposite holes.

For boring the holes the natives make use of a pump drill, tipped with a flake of chalcedony, and they appear to adhere to this primitive tool in preference even to an ordinary awl or gimlet.

When the whole canoe is thus accurately fitted and sewn together, the seams are covered with a thick dressing of vegetable putty, made from the scraped kernel of the nut of the tree *Parinarium laurinum*. This putty when first applied is of a lightish brown colour, but soon becomes black, and hardens completely in about four days.

Description of the different parts of a canoe of Shortland Island, in the Bougainville Straits (Plate XL) :—

A large canoe	*Kinu.*
A small canoe	*Goa.*
1. The garboard strakes	*Hangamiri.*
2.	*Ora.*
3. The second strakes	*Haunisi.*
4.	*Aharai.*
5. The third strakes	*Hatalanaonao.*
6.	*Lovulovu.*
7. The stem and stern pieces	*Dito* or *Sito.*
8. The fourth strakes	*Hamori.*
9. The fifth strakes	*Si-ing.*
10.	*Aporisi.*
11. The gunwale strakes	*Dra-o-hosi,* or *Drau-ung-hosi,* or *Pogopogo,* or *Togolo.*
12.	*Makatoa.*
13. Flat representations of faces looking both ways on bow and stern.	*Vos-ara* or *Bos-ara.*
If an image carved in the round as shown in woodcut.	*Beku.*
Central ridges left along the planks inside canoe.	*Girigiri.*
Finials of ridges of Lovulovu (6) ...	*Vagovana.*
C. The timbers	*Siu.*
D. The small solid, wedge-shaped timber in bow, with ornament.	*Tuvituvi.*
The bow	*Kove.*

The stern	*Tautau.*
The fibre for sewing seams	*U-we.*
The putty	*Tita.*
The plug hole	*Utina.*

Note.—The numbers and letters refer to the illustration, and they are numbered in the order in which a canoe would be put together.

The illustration of the parts of the Shortland Island canoe is complete in itself

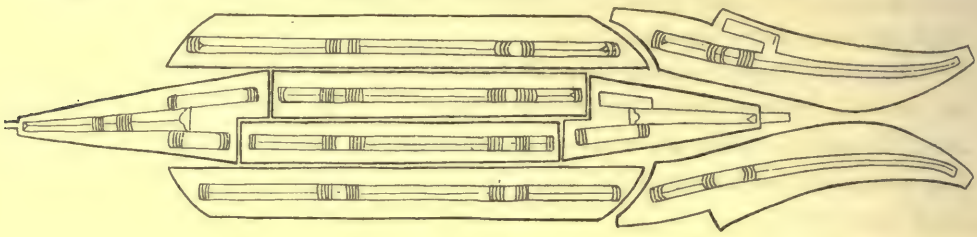


FIG. 1.

but I have added another (Fig. 1) showing the commencement of a smaller canoe which is particularly interesting as showing the ingenious break of joint between the *Hangamiri* and *Ora,* in which the raised ridges and bosses are clearly shown.

For the illustration of the complete canoe I am indebted to Mr. N. S. Heffernan, Resident Magistrate at Shortland Island. The illustration of the commencement of the smaller canoe was made by me so long ago as 1886.

I now come to the *tomako* or large head-hunting canoe of the New Georgia group and adjacent islands.

Since the islands were first discovered by the Spaniards, and probably for many centuries before that, the natives of this part of the Solomons had been in the habit of making raids upon neighbouring islands for the purpose of taking human heads and capturing slaves.

Starting out in parties consisting sometimes of only one large canoe, but occasionally in fleets, they would visit the Russell Island group and the western portion of the large island of Guadalcanar, or would sweep down the coasts of Choiseul and Ysabel, and have even been known to extend their raids to the island of Malaita. The consequences have been that the native population of the Russell Island Group has been almost wiped out, and that on Ysabel the remnants of the coast people have had to desert the sea-board and to take refuge in the mountains.

During my first visit to New Georgia in 1886 no less than forty heads, besides slaves, were brought back from Ysabel in the course of my stay of two weeks, and a similar state of affairs continued up to and after the declaration of the British Protectorate in 1893. Consequently one of the first duties of administration was to put down head-hunting with a strong hand. I am glad to be able to say that at the present time it is almost, if not quite, a thing of the past. On Ysabel especially has the result been most noticeable, as the refugees are returning from the bush and are again taking possession of the deserted sites along the coast.

The canoe from which the illustrations are taken was the last in which a raid for heads was made, about ten years ago, to the island of Ysabel. (Plates XLI–XLIV.)

It was in consequence of this raid, during which five heads were taken at Pirihadi in the Bugotu district of Ysabel, that it became necessary for me to take measures for the punishment of the guilty parties, who lived on an island near Oneavisi, New Georgia. One native was killed and the canoe, fresh from its baptism of blood, was captured.

For several years after its capture it was used at the Government Station at Gizo, but having become leaky and almost past repair, I offered to pack it and to deliver it in Sydney at my own expense, if it could be conveyed home from there to London for the British Museum.

Funds were unfortunately not forthcoming for the purpose, and the canoe was subsequently purchased on the spot for a German collection, and is, I believe, at present either in Hamburg or Berlin.

It is an extremely fine specimen of a New Georgia *tomako*, and I think it unlikely that such a fine example will be built again.

The measurements are as follows:—Length, from outside of bow to outside of stern, 44 feet, beam 4 feet 8 inches, depth 2 feet 4 inches, height of bow 9 feet 7 inches, height of stern 10 feet 9 inches.

For the illustrations I am indebted to Mr. T. W. Edge-Partington, Resident Magistrate at Gizo.

I procured a small canoe a few years ago, a faithful model in all respects of the larger *tomako*, built especially to order for Mr. F. J. Wootton Isaacson. The greatest care was taken in the building and decoration, and nearly eighteen months were required to finish it. Speaking from memory, I think the length of the canoe was about 24 feet. It is at present deposited in the Bethnal Green Museum.

Description of the Different Parts of a Tomako, or Head-Hunting Canoe of New Georgia Group.

English.	Language of New Georgia Main Island.	Language of Gore-gore or Vekavekala.
The keel	*Kutakuta*	*Puru.*
Garboard strake	*Tako*	*Sese.*
Second „	*Ngamutu*	*Derungana.*
Third „	*Loloko*	*Tonavana.*
Fourth „	*Kimo*	*Kimo.*

English.	Language of New Georgia Main Island.	Language of Gore-gore or Vekavekala.
Gunwale strake	*Nangonangotu* ...	*Nipindi.*
Central ridge along each plank ...	*Vunu*	*Lakolako.*
Ribs or timbers	*Lako*	*Unu.*
Sticks across tops of timbers ...	*Mongamonga*... ...	*Mongamonga.*
Seats	*Lambalambati* ...	*Papani.*
Round poles running fore and aft resting on timbers to support seats.	*Harangana*	*Mengovele* (?)
Step for mast	*Turudendegere* ...	*Kotongungore.*
Mast	*Dendegere*	*Ngungore.*
Lashings inside stem and stern ...	*Pisopiso*	*Mengovele* (?)
Small wooden cross-pieces inside stem and stern.	*Gavagavara*	*Katakata.*
Triangular shell ornaments inside stem.	*Barava*	*Rangangasi.*
White egg shells on stem	*Banga*	*Banga.*
Red ladder-shaped ornamentation on stem.	*Vakavakisu*	*Mike.*
Figure-head	*Musumusu*	*Wunguwungu.*
Two human figures on top of stem ...	*Beku*	*Gelana.*
The stem	*Humbehumbe* ...	*Keve.*
The stern	*Humbehumbe tatava*...	*Ngomakeve.*
The row of small shells inside the stern.	*Barambuni*	*Vakakopela.*
The plug-hole	*Bulongo*	*Miu.*
The nautilus shell inlay ornamentation.	*Kanda*	*Kerava.*
The pennant flown from the stem ...	*Tetepanika*	*Uthapasipasi*
The inlaid ornament on stem representing rainbow.	*Busambigombigo* ...	*Gosi.*
Triangular white patch on lower part of stem and stern.	*Busamgamutu* ...	—
Lower stem plank	*Ngamutu*	*Derugana.*
Continuation of keel to top of stem and stern.	*Leveri*	*Raravi.*

English.	Language of New Georgia Main Island.	Language of Gore-gore or Vekavekala.
The white painted arm with extended fingers on side of canoe, indicating that heads have been taken. If forward it indicates male heads, and if aft it indicates female heads.	*Limambovo*	*Kurukuru.*
The cement	*Tita*	*Tita.*
The vane on top of stern	*Pitipiti*	*Pitipiti.*
The two faces on stern	*Batungela*	*Gelana.*
The fibre for sewing the planks ...	*Suvulu*	
Holes in planks for fibre	*Su-suvulu*	
Bunch of feathers on bow	*Hogo*	

The names of the various parts of the pump drill for boring the holes:—

The flint top	*Livulivona*	
The fly-wheel or spindle-whorl ...	*Bolokana*	
Pump handle...	*Papalakana*	
The spindle	*Kokomburuna dinderi*	
The drill as a whole	*Dinderi*	

Attention is directed to the two small human figures looking out fore and aft at the top of the stem, as well as to the larger figure-head near the water line, and the two Janus faces looking out to starboard and port from the top of the stern. Thus watch is kept in every direction.

The white arms on each side of the canoe, indicating that heads have been taken, are, it is believed, not permanent, but are marked with coral lime after a successful raid. The canoe in question had them marked.

The inlaid ornament on the stem, representing the rainbow, is curious and most interesting. It is constantly met in the canoes of New Georgia. In the smaller and less elaborately decorated canoes I have seen attempts to imitate a rainbow made with various coloured paints.

It is, I think, possible that when the canoes pass swiftly through the water a foam bow might appear beneath the stem near the position indicated, which would, as Lord Tennyson puts it, "brighten as the foam bow brightens when the wind blows the foam," and that the ornament is an attempt to fix permanently this elusive and beautiful phenomenon.

The next type of canoe is that used on Ysabel Island, and the same type is in use at Savo, Florida and on Guadalcanar.

The natives of Ysabel do a good business in building canoes for sale to the natives of ths neighbouring islands.

The bows of these canoes are frequently tastefully ornamented with shell inlay and colours, but the elaborate scheme of decoration shown in the *tomako* of New Georgia is not met with.

The lines and curves are particularly graceful, as is shown in the illustrations. (Plate XLV.)

Description of a *biabina* or large canoe in the language of the Bugotu district of Ysabel Island :—

The planking	*Na pava.*
1. The keel	*Sara.*
2. The garboard strake	*Gaileka.*
3. The second strake	*Vita.*
4. The third strake...	*Poapoga.*
5. The gunwale strake	*Ragi.*
The central ridge left along each plank	*Ngaingaji.*
The bosses projecting from the planks for lashing to the timbers.	*Puipuhi.*
The last boss in the *vita*	*Noonoko.*
The forward rib or timber	*Luhu.*
The central rib or timber	*Tango.*
The after rib or timber	*Jata.*
Two poles, lashed along inside the canoe, resting on the timbers and lashed to them to support the seats and to prevent them from touching and straining the planks.	*Binalagi.*
Lashings for tying the timbers to the planks ...	*Tari.*

From their positions—*Tari luhu, Tari tango* or *Tari jata.*

A.	*Boeboke.*
B.	*Ragi.*
C.	*Korebi.*
D.	*Legu.*
E. Keel band at bow and stern	*Toroko.*

The stern one, *Toroko-legu*; the bow one, *Toroko-nago.*

F. Top of bow	*Bilugau.*
G. Small wedge-shaped piece of wood on bow ...	*Suasuma.*
H. The wash-board	*Laulau.*

I. The figure board in stern ... ... *Sula daudau.*
J. Small cross-pieces lashed to bosses on *Laulau* to strengthen the stem ... ... *Konga laulau.*

The last type of canoe of which I am able to supply a description is that in use at the island of Malaita.

The lines of the Malaita canoes are not so elegant as those of other islands, and in comparison with them they have, to a critical eye, somewhat of a clumsy and box-like appearance.

The planks are thicker, and consequently no ridge is left along the centre of each. Nevertheless, they have a certain distinctiveness of decoration all their own. The decoration is produced by black coloration upon the planks, which are otherwise left in their natural condition.

The canoes are broader in proportion than the *tomako* of New Georgia, as will appear from the measurements given, the large *tomako* illustrated above being 44 feet in length with a beam of only 4 feet 8 inches, and the Malaita canoe here represented being only 42 feet in length, with a beam of 5 feet 3 inches.

Names of parts of large Malaita canoe or *Baru*, as illustrated (Plate XLVI):—
Length, 42 feet; depth, 3 feet 3 inches; beam, 5 feet 3 inches.
(A small Malaita canoe is called *Jola* or *Yola*.)

1. A small projection on top of bow and stern ... *Siko.*
2. The top piece at bow and stern ... ... *Aingali.*
3. The second piece at bow and stern ... ... *Roa.*
4. The third piece at bow and stern ... ... *Bali.*
5. The fish ornament at bow ... ... *Lodo-ia.*
6. The bow-shaped carved ornaments ... ... *Baruague.*
7. The twelve fish carvings ... ... *Buma.*
8. The black painted ornamentation ... ... *Uliuli.*
9. The keel ... ... *Gau.*
10. The stem and stern pieces, continuations of keel. *Uguraia.*
11. The bow... ... ... *Lau-u.*
12. The stern ... ... *Buri.*
13. The garboard strakes ... ... *Aifou.*
14. The second strakes ... ... *Landa.*
15. The third strakes ... ... *Tauvaro.*
16. The gunwale strakes ... ... *Auloho.*
17. The ribs or timbers ... ... *Lusu.*
18. The two poles resting on and lashed to timbers or ribs, and running right fore and aft to support the seats. *Lula.*
19. The projecting bosses left on the inside of the strakes, to which the ribs or timbers are tied. *Teiteia.*

No central projection is left along the strakes in the Malaita canoe to strengthen them, as the wood is thicker than is found in the Ysabel and New Georgia canoes.

20. The cement for the seams ... ... *Raia.*
21. The fibre for sewing seams ... ... *Rata.*
22. Small cross-lashings inside bow and stern ... *Bobo.*
23. Small lashings inside raised part of bow and stern. *Lolonga.*
24. The plug hole ... ... *Suvula.*

There remains only one other type of Solomon Islands canoe, and I am not at present prepared to supply a description of it. It is the type in use at Ulawa, San Cristoval and Santa Anna.

A very good small specimen is in the collection of the British Museum, and has been illustrated in *The Discovery of the Solomon Islands*, published for the Hakluyt Society, London, 1901, p. xxii.

Labillardiere's description of this type of canoe quoted above is very accurate. The bunches of coloured fibre and the figure of the dog inside the stern are represented in the British Museum specimen, and are generally observed in existing examples.

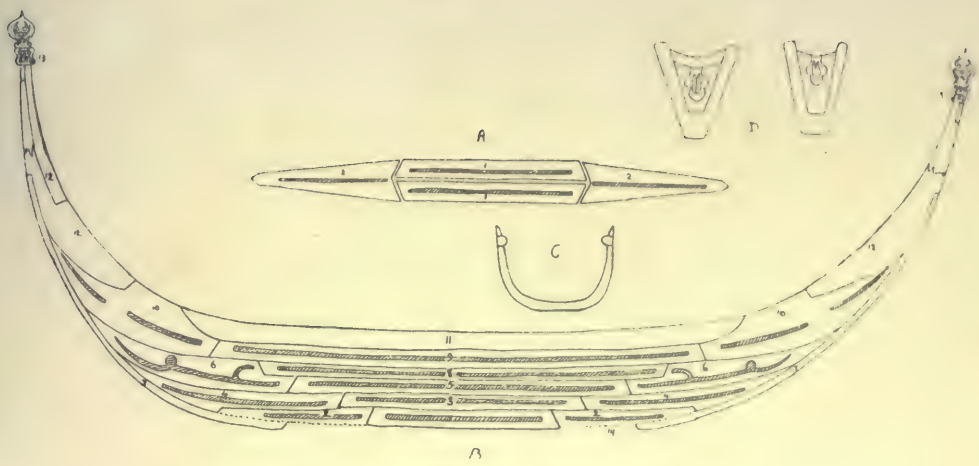
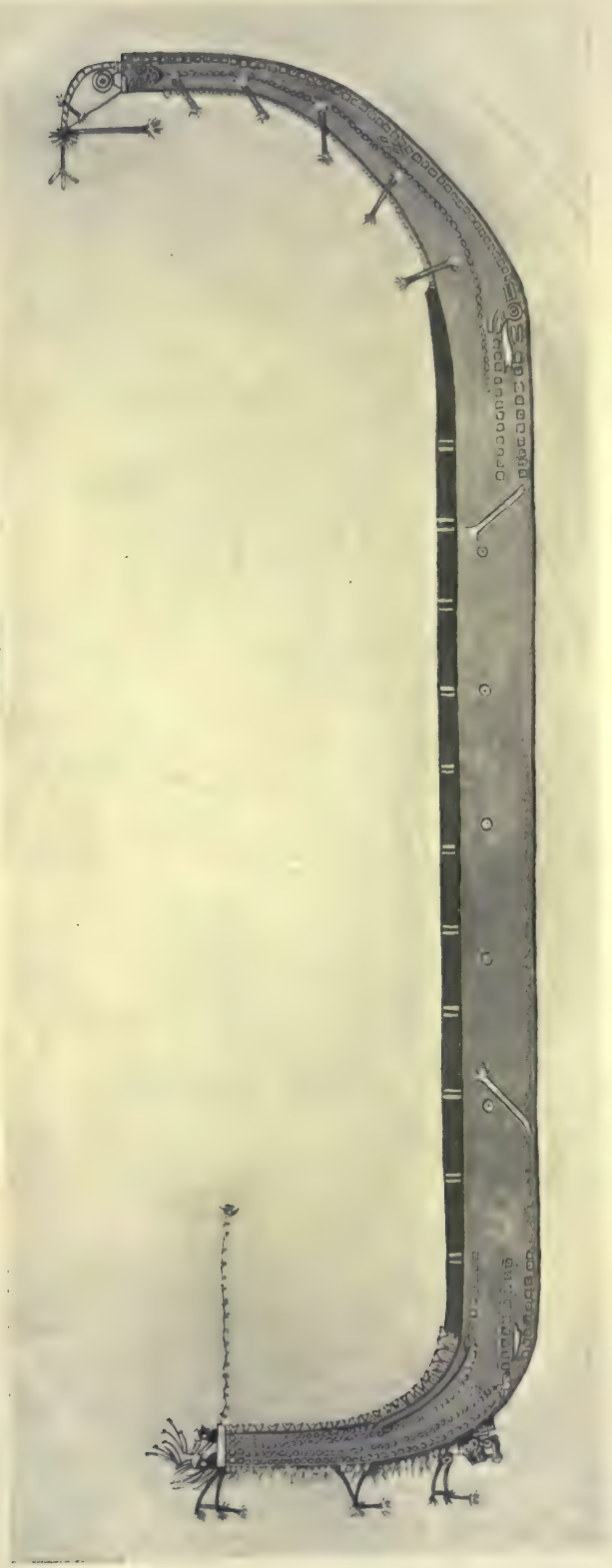


DIAGRAM OF SHORTLAND ISLAND CANOE.



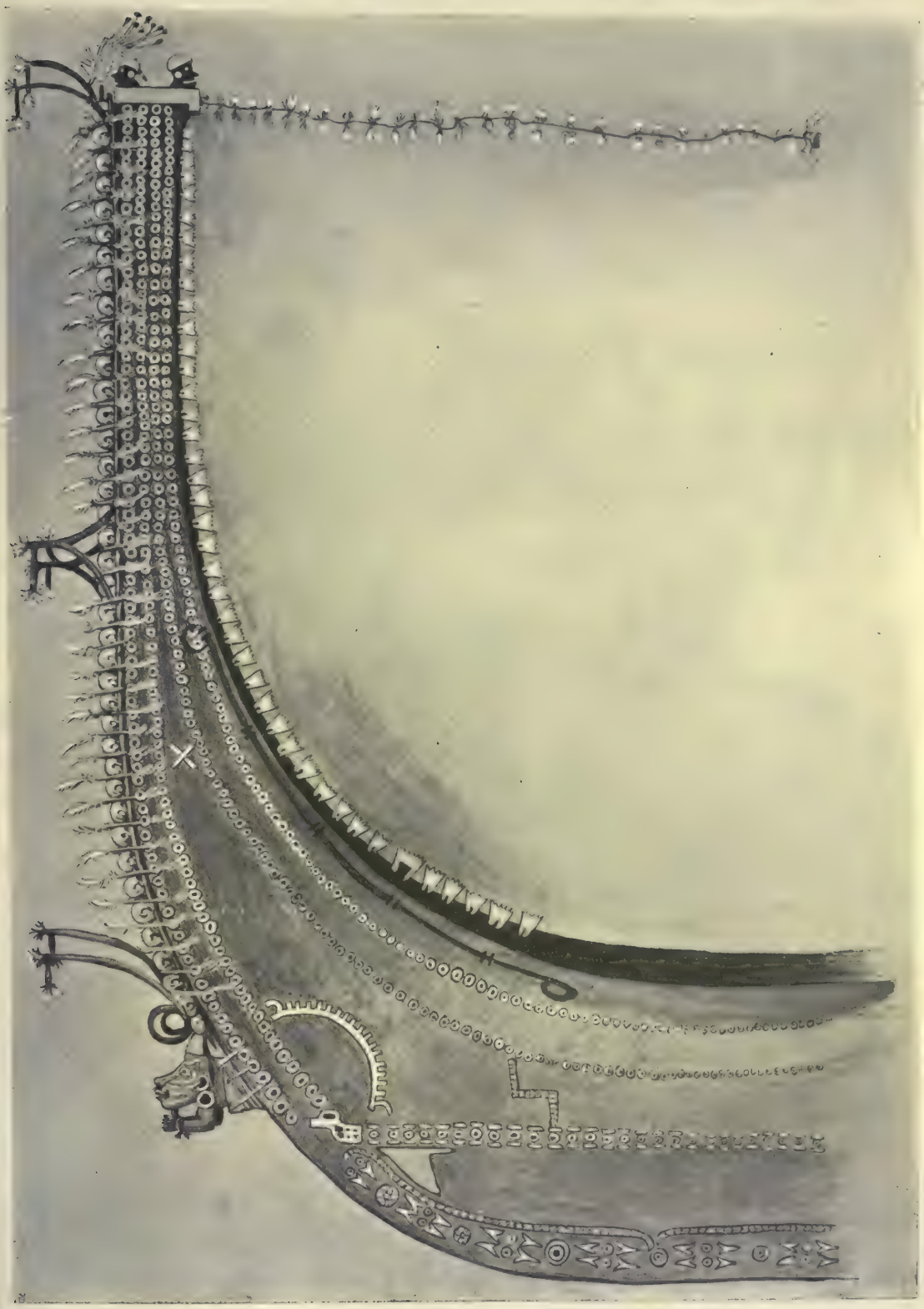
CANOE FROM SHORTLAND ISLAND.

CANOES OF THE BRITISH SOLOMON ISLANDS.



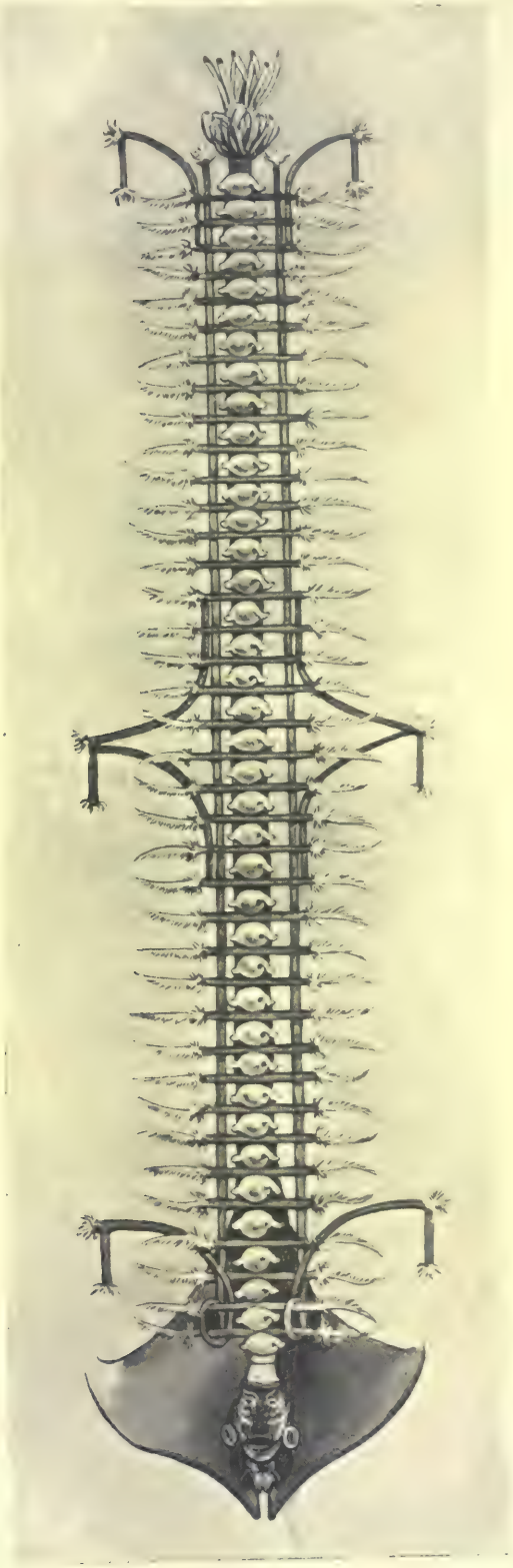
HEAD-HUNTING CANOE FROM YSABEL.

CANOES OF THE BRITISH SOLOMON ISLANDS.



HEAD-HUNTING CANOE FROM YSABEL. DETAIL OF BOW.

CANOES OF THE BRITISH SOLOMON ISLANDS.



HEAD-HUNTING CANOE FROM YSABEL. DETAIL OF FRONT OF BOW.

CANOES OF THE BRITISH SOLOMON ISLANDS.



HEAD-HUNTING CANOE FROM YSABEL. DETAIL OF STERN.

CANOES OF THE BRITISH SOLOMON ISLANDS.

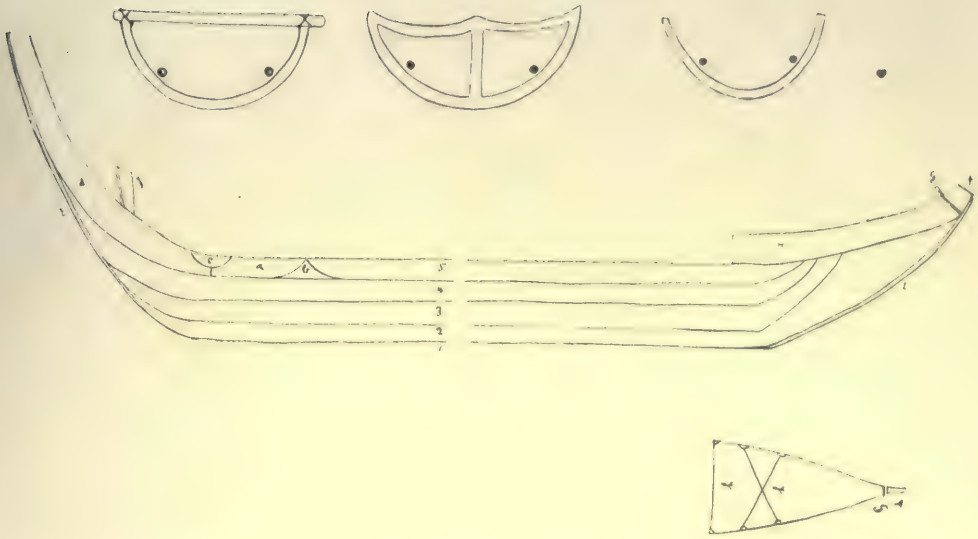


DIAGRAM OF YSABEL CANOE.



CANOE FROM YSABEL.

CANOES OF THE BRITISH SOLOMON ISLANDS.

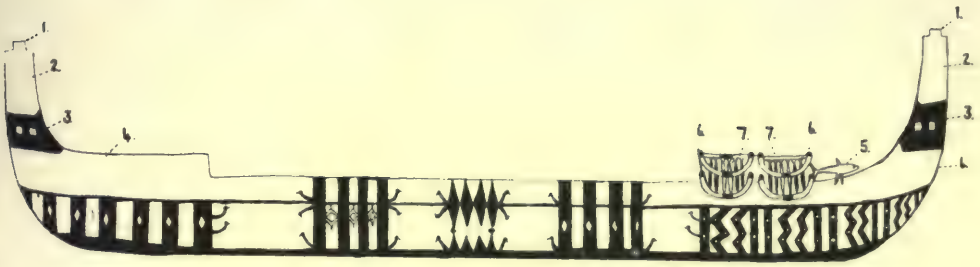


DIAGRAM OF MALAITA CANOE.



CANOE FROM MALAITA.

CANOES OF THE BRITISH SOLOMON ISLANDS.

SOME STONE CIRCLES IN IRELAND.

By A. L. Lewis.

It is well known that dolmens or cromlechs, great and small, are very numerous in Ireland, but little is heard of circles in that country; still there are some, and it is to be regretted that Mr. Borlase, when collecting and arranging the materials for his great book on *The Dolmens of Ireland*, in which he records 898 of them (p. 418), did not prepare a list of the circles which he found mentioned on the maps and in the books and manuscripts consulted by him. He does indeed mention a few examples "which, amongst others," came under his notice, and gives some illustrations, mostly from drawings by J. Windele; but, as he leaves out the largest and most noteworthy, about which nevertheless it is obvious from his book (p. 1011) he knew something, I am inclined to think that he may have intended to write another book about Irish antiquities, and may have reserved some of the information in his possession for that purpose.



FIG. 1.—FROM BORLASE, *Dolmens of Ireland.*

The circles of which Borlase reproduces drawings are very small, and at first sight appear unimportant, but they are interesting, and even valuable, in helping to show the numerous varieties of circles that exist in different places. Although these are so small, the stones composing them are as large as many of those in the circles of Cornwall and Dartmoor; one circle, only 9 feet in diameter, has an outstanding stone 12 feet to the south; another, only 8 feet in diameter, has an outstanding stone 9 feet to the north-east: these stones seem to be too near the circles to be useful for astronomical observation, and the question arises whether they may not themselves have been objects of adoration. In another place we have two small circles in line, N.N.E. and S.S.W., with a dolmen between them. Two other circles have the central stone which the modern "Druids" regard as a necessity, but which does not seem to have existed at any time in the English circles; these are most likely to have been burial cists from which the

covering mounds or cairns have been removed, but, if they should chance to be merely stone tables, and if similar things should be proved to exist in Wales, it must be borne in mind that the connection implied is not between England and Wales or England and Ireland, but between Wales and the south-west of Ireland.

The largest circles in Ireland, as I have already said, are not mentioned by Borlase; they were concentrated around Lough Gur, which is 10 or 12 miles south from Limerick and 9 miles north from Kilmallock railway station. Murray's Handbook of 1864 states that one hundred early remains and circles are known to have existed there within the memory of man, but it does not say much about them. Mr. Crofton Croker, who wrote—as he said from memory—a very good account of some of them in the *Gentleman's Magazine*, of 1833, said there were monuments all round Lough Gur, and even fifteen miles from it, connected with one another. The letters of the alphabet only just suffice to denote the circles and other stone remains marked on the 6-inch ordnance map (surveyed in 1840 and revised in 1900–1), and that without regard to forts and other constructions of earth and stone, but many of the things marked on the ordnance map, or described in the older accounts, are not now to be found.

Lough Gur is in 52·31 north latitude, and its present very irregular coastline is about three miles round; up to about 1839 it was nearly double that, but a large shallow area was then partly drained, and a rocky island in the middle converted into a peninsula; access to this island was formerly by two causeways, each guarded by a square tower and other fortifications, which again were hopelessly commanded by the island hill behind them. There are two smaller islands which are thought to be partly if not wholly artificial, on one of which there is also a mediæval tower, and on and round these, when the water was lowered, great quantities of bones of animals, and numerous stone and bronze weapons, etc., were found. The surface of the lake is from 240 to 250 feet above sea-level, but some of the seven hills close to its banks rise to more than 500 feet above sea-level, and give it a very picturesque appearance; each of them was crowned in prehistoric times by a fort, now destroyed, and those appear to have been connected by other works, so that it was a place of great strength, and probably of great sanctity, in prehistoric and also in mediæval times, for the country round is as full of remains of the latter as of the former. It was a great stronghold of the Desmonds up to the time of our Queen Elizabeth.

I will now proceed to describe the circles and other remains denoted on the plan by letters.

A. Rockbarton, the seat of Lord Fermoy, is a large demesne, nearly two miles long, and in it, about a mile off the edge of the map, was a circle, the stones of which seem to have been broken up to make a wall for a plantation which occupies its site. About 650 feet from this circle, in a line 18 degrees E. of N., according to the 1-inch ordnance map, there still remains a standing stone, 7 feet high, 5 feet broad at the base, and 1 foot thick. One mile in the opposite direction, 18 degrees W. of S., is a little hill-top, well-marked on the ordnance map, but now

hidden from the site of the circle by trees, etc. This line is nearly the same as that through the circles at Stanton Drew to Hauteville's Quoit, and Sir Norman Lockyer tells me that having regard to the latitudes and to the estimated heights of the respective horizons this was the direction in which at this circle Capella rose in 1300 B.C. and Arcturus in 950 B.C., while at Stanton Drew[1] the date indicated by Arcturus was 1690 B.C. There are some scattered stones in another plantation in this park which may be the remains of some other monument.

B. Here are six small stones in line, 50 degrees W. of N., and E. of S., with three in another line at a right angle on the north-east side, and two or three more at the south end; these are incorrectly described on the 6-inch ordnance map as a stone circle. A circular cup-shaped hollow in the ground, either natural or artificial, is said to have existed south-west from these, but is not marked on the 6-inch map, and I did not see it.

C, D, E, F, form a group which I will describe fully presently.

G. A stone circle is marked here on the 6-inch map; there are in fact seven small shapeless masses of stone forming an irregular ring, 10 yards by 8 yards across, but they have a very natural appearance, and may have been under water in prehistoric times. Close to, but above them, are some earthworks, enclosing a space about 70 feet square, open to a low cliff, which was, I suppose, at one time the bank of the lake.

H. At this spot is a ring of low turf bank with small stones, about 24 yards in diameter, with what may be the remains of a tumulus inside it, all very imperfect and hardly visible on the side nearest to the lake, toward which the ground on which it stands slopes.

I. Here is a similar but better structure; a double ring of stones, some of which are 4 feet square by 1 foot thick. The two rings are about 6 feet apart and the space between them is more or less filled up with earth; the area inclosed by this wall of earth and stone is about 100 feet in diameter, and its surface is very irregular. Professor Harkness, F.R.S., who contributed a good description of some of the monuments round Lough Gur to the *Quarterly Journal of Science* of July, 1869, dug into this circle and found some human remains, mostly of children from six to eight years old, which included parts of a skull; so far as these remains enabled Professor Harkness to form any opinion he thought they belonged to "a broad-headed people, with small eyes and of short stature, approximating more nearly to the present Finns and Lapps than to any other race of men." Borlase (*Dolmens of Ireland*, p. 1011) says the fragments of this skull are in the museum at Queen's College, Cork, where he examined them.

K. This is the site of another small stone and earth circle of similar construction, which Professor Harkness found to be very imperfect forty years ago, and which I did not find at all. All these are described on the 6-inch ordnance map as "stone circles," but it will be seen that they are very different from what

[1] *Stonehenge*, p. 174.

we in Great Britain understand by that term, and I see no reason to suppose that they were anything more than burial grounds. There appear to be some very like them in Strathspey, near Aviemore Junction, but each of the Scottish examples was surrounded by an open circle of pillar stones, of which there is no trace round those on Knockadoon in Lough Gur.

L, M, N, O, P, form another special group which I will describe presently.

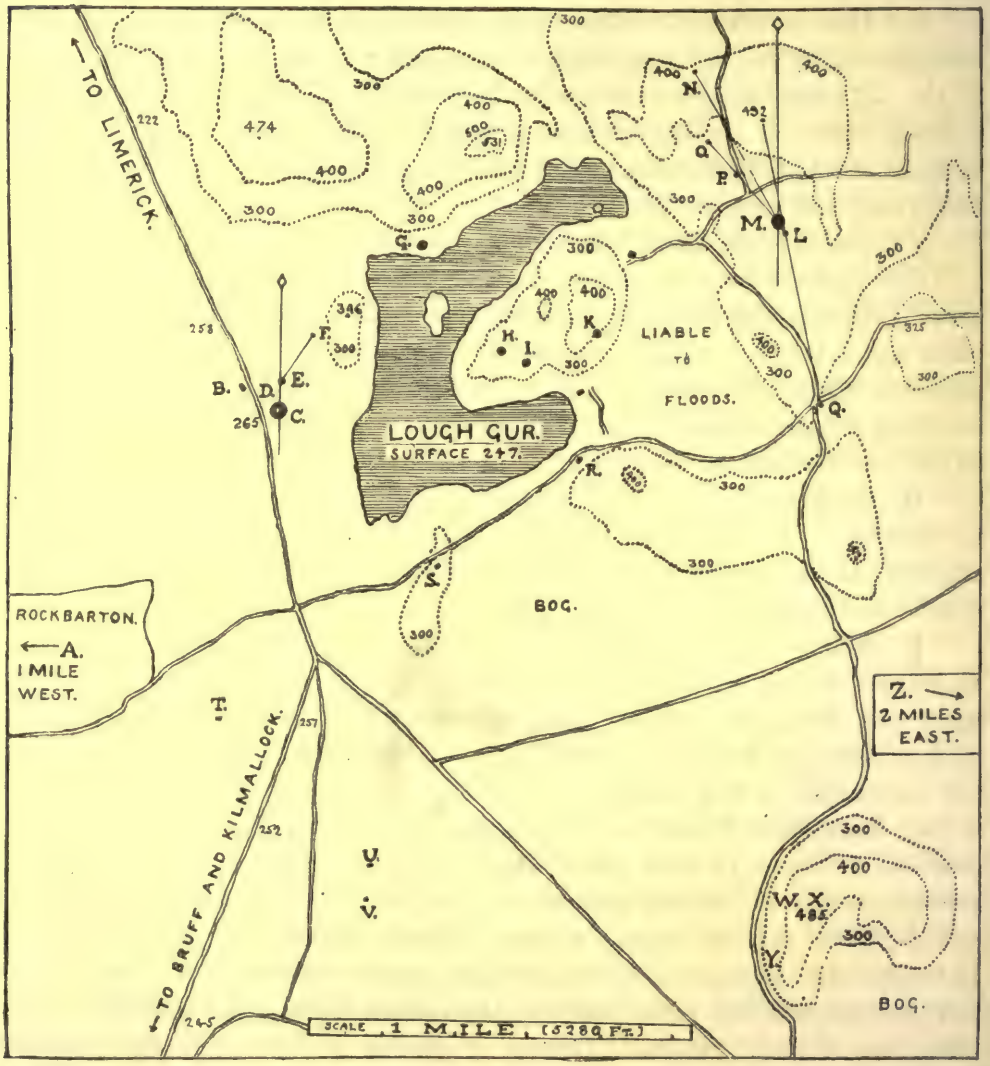


FIG 2.—MAP OF DISTRICT (TRACED FROM 6 IN. ORDNANCE MAP AND REDUCED BY PHOTOGRAPHY).

Q. At this point, called Lough Gur Cross, there are some cottages, and in the garden of one is a "leagaun," or standing stone, about 8 feet by 8 feet by 2 feet thick. A woman came out of the cottage and told me there was a crock of gold under the stone, which was guarded by a terrible ghost. In reply to a question she said she had never seen the ghost, but other people had, and, on my

inquiring why they did not look for the gold in the daytime, she said it was no use, because it could only be found at night, and then the ghost was there to protect it.

R, S, T, U, and V are remains of "Giants' Graves," probably sepulchral chambers, with which I will deal fully presently.

W, X, Y. Stone circles are marked on the 6-inch ordnance map at these spots, but do not now exist. I walked along the road by the side of which they are supposed to stand, but could find nothing. I also inquired of cottagers on the way about them, and was told there were no such things there.

Z. At a place called Ballynamona, two miles east from this point, another circle is marked on the 6-inch ordnance map, but, as I was told it had been destroyed, I did not go to look for it. I do not know whether it may have been the circle near Inch St. Lawrence of which the Rev. P. Fitzgerald wrote in 1826 :— "There is a stone circle near High Park, where a number of stones are to be seen, some lying in confusion, others in circles or direct lines ; it is remarkable that they are all round, and one large stone detached from the rest stands erect which measures 9 feet in height, nearly the same in breadth, and is 4 feet thick on one side." Some remains are also marked on the 6-inch O.M. and spoken of by Crofton Croker on the south edge of the lake. Those I did not see and do not know whether they were really remains of circles or of doubtful origin and purpose like those at G on the north side.

We have now to return to the "Giants' Graves," R, S, T, U, and V, and to the two great groups of circles and stones, L, M, N, O, P, on the north-east side, and B, C, D, E, F, on the west side of Lough Gur, and I will ask you to observe that the outlying stones of the circles on the east side of the lake are to the north-west, and that those of the circles on the west side are to the north-east.

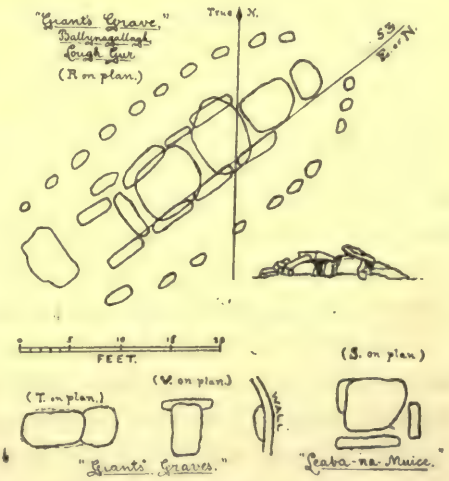


FIG. 3.—PLAN OF "GIANT'S GRAVES."

Of the "Giants' Graves" that marked R on the map is the largest and best preserved ; its total length is about 35 feet, in a line 53 degrees E. of N., and W. of S. ; its central feature is a chamber about 14 feet long, 5 feet wide, and 3 feet high, the capstones of which seem to have been shifted, though two still remain on the upright stones which supported them ; there is probably another smaller chamber at the north-east end, and, at the south-west end, there was either another chamber or a small open shrine, such as appears in an almost identical structure in Antrim, described by Dr. Sinclair Holden in *Anthropologia*. In both cases several small stones surround the chamber, extending the width of the whole monument, in this

case to about 15 feet. A description of this "Giants' Grave," from the Ordnance Survey Letters, is given by Borlase, who thought it had been destroyed, and he also gives a copy of a sketch made by Miss Margaret Stokes "between the date of the survey and its destruction"; this however very fairly represents its present condition, the alleged destruction not having taken place. Murray's Handbook, 1864, says that a chamber covered over with large flags was destroyed by treasure seekers after the death of an old woman who used to dwell in it, but it is not clear whether that refers to this or to some other monument formerly existing nearer the lake.

The "Giant's Grave" marked T on the map consists of two stones, each 1 foot thick, one 6 feet by 3, and the other, 4 feet square, lying on the ground level, and apparently resting on one or more underneath, but so closely that I could not see what was below.

Of that marked V on the map only three stones are left, one, 5 feet long and 2 high, probably in its original position; another, 5 feet by 3, one end of which rests on the upright stone and the other on the ground, and a third stone built into a wall, 5 or 6 feet away from the others.

The monument marked U on the map is enclosed in private grounds, and, as I was told that there is no more left of it than of that marked V, I did not go to see it. It was of one of these two that the Rev. F. Fitzgerald wrote in 1826, that it had "lately been broken down by a farmer, who had two of the stones taken to make pillars for his gateway."

The dolmen marked S on the map is also described by Borlase from the Ordnance Survey Letters; it consists at present of two upright stones in position, and a third fallen, with the capstone which they supported lying upon it, inside the chamber it originally covered, and which is about 6 feet by 3 or 4, and 3 feet high; whether it were ever any larger cannot now be ascertained. I have found no record of other stones forming any extension of it. This little monument is situated on the north end of Bally-na-gallagh hill, overlooking the south end of Lough Gur, and is called Leaba-na-Muice, which, I am told, means the bed of the pig or pigsty, a use to which this little dolmen may very likely have been put at some time or other. Mr. Lynch, however, strongly objects to any such suggestion, and says that pigs were offered as sacrifices, and that priests were on that account called pigs by the Phœnicians and others, and that the name in the case before us really means "the bed in which the Druid sleeps." The Rev. F. Fitzgerald writing in 1826, said that a few years previously a stone coffin and a human skeleton were found near this dolmen; they may however have been found in the graveyard of the old nunnery, a quarter of a mile south from it. Borlase mentions but does not give plans of any of these structures, and does not appear to have visited this part of Ireland himself.

Of the group on the north-east side of Lough Gur, L represents a circular wall 33 to 34 feet in diameter, of small stones, Lynch says 28 in number, standing 3 feet high; the space inside them is filled up with earth nearly to their tops, and forms in fact a round raised platform: 75 feet from it are two concentric circular walls, 184 and 155 feet in diameter respectively, formed of stones 5 or 6 feet high; the space

between these walls (nearly 14 feet) is also filled with earth to a height of 5 feet, so that they form really one round wall, 14 feet thick and 5 feet high. In the middle of this enclosure (marked M on the map) is another circular wall of upright stones of similar height, enclosing a space about 48 feet in diameter; this wall also had an earthen bank with perhaps an outer stone facing on the outside of it, for some of the bank still remains on the east side, the rest having, I suspect, been used in making the fence which runs through the circles. This fence I was told was constructed "when the bad times came," it being thought desirable to divide what was then one farm between two brothers. Mr. Crofton Croker (writing as he said from memory) in 1833, said there were several concentric circles here, and there are some small stones on the east side of the inner circle which look like part of another, but the ground slopes down there, and I think they were only placed there to make a step or terrace, and were never part of a complete circle. A line drawn from the centre of L through that of M and its inner circle, in a direction 29 to 30 degrees W. of N., arrives at a stone (marked N on the map), 8 feet high, which stands on the top of a ridge 2,500 feet away; this stone is now hidden by trees and buildings, but for which it would certainly be visible on the sky-line (2 degrees high) from the circles. Two other standing stones (marked O and P on the plan) are shown on the 6-inch ordnance map in another line, 41 degrees west of north, from the centre of circle M, and 860 and 1,450 feet away from it respectively; the nearest is now only 4 feet 3 inches high, but looks as though it had been broken down; it stands on a bank above the side of the road. I did not go to the other, which Croker, in 1833, said was 9 feet 4 inches high, 6 feet 9 inches wide, and 13 inches thick, but I think I was told it had been thrown down. Ten degrees W. of N. from circle L is the highest point round about, and in the same line, 10 degrees E. of S. is the stone marked Q on the map, where the ghost is said to guard the gold; it is 2,480 feet away—within 1 per cent. of the same distance as the stone N to the north-west. None of these stones can now be seen from the circles, because of modern obstructions, but I believe all were visible originally; the fact of their forming lines with the circles has not, I think, been mentioned by any previous writer, although it is clearly shown on the 6-inch ordnance map. Not one stone of this whole group is to be found, however, on the 1-inch map, and Mr. Borlase seems to have thought that it was a dolmen surrounded by a stone setting.

Before going further, I should like to draw attention to the very striking resemblance in principle, though not in detail, of the plans of these circles in Ireland, and those of Stanton Drew in Somersetshire. In both we have a line, from the centre of a smaller circle through that of a larger one, to a single stone at a considerable distance in a northerly direction; and a second line from the middle of the larger circle in another direction. At Stanton Drew these lines point to the east of north, and in these Carrigalla circles they point to the west of north, but I shall presently deal with some circles on the other side of Lough Gur, which are planned in a very similar manner, and in which the lines point, as at Stanton Drew, to the east of north.

Respecting the Carrigalla circles Captain Boyle Somerville, R.N., writes to me: "The alignment of N. 29, 30 W. with an altitude of 2° produces a declination of 33° 35′ N., namely, for Capella in 1600 B.C., or Arcturus 500 B.C. (of course, setting). The alignment of N. 41 W. at an altitude of 2° produces a declination of 28° 52′ N. and is for Capella 2500 B.C., Castor 2000 B.C., or, what I believe to be the real object, as I have got declinations in several places of about the same amount, which do not fit with the above early date, the Moon! The moon changes her tropic declination gradually from about 28½° N. and S. to about 18½° N. and S.; it takes 18·6 years to get from 28½ back again to 28½ (the Metonic Cycle) and I believe the alignment in question was intended to mark the ends of each such cycle." (At Stanton Drew the Metonic Cycle number 19 appears to be embodied in the proportional measurements. See *Journ. Anthrop. Inst.*, 1897, p. 199.)

In single instances, such as the "Friar's Heel" at Stonehenge, it has been asserted that the outlying stone had no connection with the adjoining circle, but when we find so many cases so much resembling each other, it can no longer be contended that all these things had no meaning, but were purely accidental. There must have been a connection and an intention of some kind, and the similarity of the system indicates that that connection and intention were the same in principle, though the differences in detail show that the particular objects in view were not exactly the same in all cases. It is, however, important to discover if we can whether the influence under which these stones were arranged in this manner passed from Ireland into Great Britain or from Great Britain into Ireland.

We come now to the last remains which I have to describe—those on the west side of Lough Gur, marked C, D, E, F on the map. At E is a circle 55 feet in diameter, composed of fifteen large irregular masses of stone, with a space for another, or for an entrance, which, I think, from its position, is more likely; the dimensions of the stones vary from 3 to 7 feet, and they do not for the most part look as though they had ever stood in a more erect manner than they do now, though it is said by Croker that they did. Looking to 35 degrees E. of N., according to the 6-inch ordnance map, we see a stone 10 feet high, 7 feet wide, and 2¾ thick, 740 feet away, and we seem also to have here a group of three hills such as I have often noticed in other places. A prolongation of this line to the south-west, through the entrance to this circle, would probably have struck the centre of a circle destroyed in or about 1830, which is variously described as having been 50 yards, or 160, or 170 feet in diameter—perhaps it was 165 feet, or three times the diameter of circle E. It is said to have possessed 72 stones in 1826, but only 60 in 1828, and of these all but six were destroyed in 1830; if any of those six are left now, they are probably built into some of the stone fences, for I did not see them; the stones of this circle are said to have been about 3 feet high, some close together, and others wide apart, which seems to suggest that originally there may have been many more filling up the gaps. As this circle is entirely destroyed I cannot say positively that its centre was strictly in line with that of circle E and

the outstanding stone F, but, having regard to the distances at which it is stated by various authors to have stood from circles E and C, I think it must have been so, and in that case we have this line through the centres of two circles D, E, to the outstanding stone F, and to a prominent hill-top beyond it, in a line 35 degrees E. of N. Neither the destroyed circle D, nor the still existing circle E, is known to have had any bank of earth about it, but Beaufort, writing in 1828, speaks of an irregular conical stone, 4 feet high, 20 feet S.E. from the destroyed circle, and of another fallen stone 45 feet due east from the stone just mentioned; this is most likely the one spoken of by Crofton Croker in 1833 as a large flat stone, 7½ feet by 4½ by 6 feet high, supposed to have been an altar. Croker also mentions a stone, 5 feet high by 6½ by 4, 160 yards north-east from circle E and another (that which still remains) 11 feet 9 inches high, 100 yards further in the same direction; but here again it is uncertain whether this stone were in the line E F, or whether it

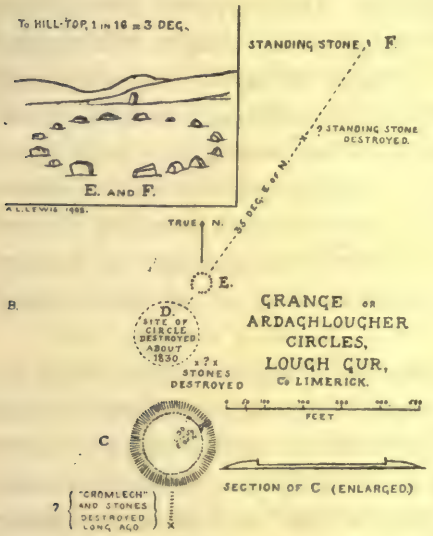


FIG. 4.—PLAN OF GRANGE CIRCLES, ETC.

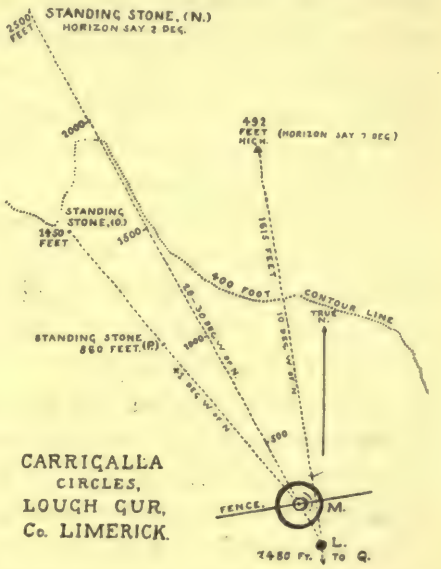


FIG. 5.—PLAN OF CARRIGALLA CIRCLES, ETC.

were in a different direction from the centre of E, like the stones marked O and P at the Carrigalla circles. The line 35 degrees E. of N. is, however, still existing as between E and F, and is the same as that of the "Kingstone" from the Roll-rich circle in Oxfordshire, and of some prominent hills from other British circles. Sir Norman Lockyer informs me that, estimating the height of the horizon at three degrees, this line, in the latitude of Lough Gur, would have struck the rising points of Capella in 1750 B.C., and of Arcturus in 500 B.C.

Lastly, we come to the consideration of the circle marked C on the plan, which has for various reasons attracted more attention than any of the others. In its present restored condition it is a circular space, 150 to 155 feet in diameter, fenced in by a perfect wall, about 5 feet high, of large stones, several of which are 6 feet or more in height, the largest being 9 feet high, 6¾ wide, and 3 thick; before the

restoration the ground here seems to have been lower and this stone consequently higher above it; this stone stands 30 degrees E. of N. from the centre of the circle, the line in which Sir Norman Lockyer says Capella rose in 1950 B.C., and Arcturus in 250 B.C. A bank of earth 30 feet wide surrounds the stone wall, which forms an inner facing to it; on the outer side the bank slopes to the ground level, which is 7 feet below its summit, the inside being 2 or 3 feet higher than the ground outside. There is but one entrance—a passage, 3 feet wide, lined with stones on each side, those at the inner end being 6½ or 7 feet high; this entrance is 59 degrees E. of N. from the centre of the circle, a direction which Sir Norman Lockyer connects with the rising of the sun in May. There are now about 125 stones in the wall, and 12 in the entrance passage. Beaufort in 1828 described this circle as possessing only 43 stones, some of them very small, surrounded by a mound about 15 feet broad and about 4 feet high, which skirted along the outside edge of the stones, enclosing the area within them as a pit of 3 or 4 feet deep. Crofton Croker in 1833 called it a sloping bank, 12 feet wide, and 6 feet high. These apparent discrepancies are explained by the fact that the circle was restored, some time in "the sixties," by Messrs. John and Edward Fitzgerald, who occupied the land on which it stands, and by their landlord, the Count de Salis. Mr. Edward Fitzgerald, however, told Mr. Lynch that only a few new stones were put in at the restoration, all the others now on the ground belonged to the circle, but were covered by earth from the surrounding rath or bank. It is said that formerly there was a cromlech 100 feet due south from this circle, the tops of the stones of which approached one another, and that a row of flagstones led like stepping-stones from it to the circle, but all these have long been destroyed.

Before this restoration took place the appearance of the then sloping bank and the half ruined and half buried wall of stones would, I suppose, have been very like that of the mysterious structure on Bodmin Moor called "Arthur's Hall"; and if the restoration of the Irish circle be correct it seems likely that while the Grange circle certainly was as "Arthur's Hall" is, "Arthur's Hall" probably was originally as the Grange circle now is, the chief difference between them being that one is round and the other oblong. Both are in the midst of a number of circles from which they very much differ in construction, and with the general scheme of which they do not appear to have any connection, and it has occurred to me that they may have been used for a very different purpose. The Grange circle as restored would be useless as a fortification, the rampart being much easier to ascend from the outside than from the inside, and the single narrow entrance would be very inconvenient for most purposes. Lynch says that Lough Gur was the centre of one of the hunting districts of the ancient Irish, and vast quantities of bones of *bos longifrons*, pigs, goats, stags and dogs, were found when the surface of the lake was lowered; and I would suggest that in prehistoric times there may have been great tribal game drives, in which (as formerly in Australia) a large tract of country would have been surrounded by an ever-narrowing ring of men, women, and children, shouting and howling, and driving all the wild animals before them over the rampart

wall into the pound where—the narrow entrance having been closed—they could be kept and killed as they were wanted. Against this it may be said that the cromlech at the south and the orientation of the entrance suggest some religious purpose for the circle, but it is not unlikely that the festive game drive might have been preceded and followed by some rites or ceremonies. It may also be asked why should the inside of the pound have been raised above the natural surface, but that question may be asked in any case, and it may be that some of the raising and levelling is due to the restoration. I do not, however, say that this circle was a game-trap or pound, but merely that it may have been, and that it would have been a very convenient means of providing a continuous supply of animals for sacrifices and food.

In the absence of exact measurements and plans, I cannot say much about proportionate distances, but I may point out that the inside diameters of circles C and M are apparently about equal, and that the distances of stones N and Q from circle L are also the same within the allowance of 1 per cent. for errors of workmanship, which Professor Flinders Petrie has found in British earthworks. The distance also between circles L and M is about two diameters of L, and the distance between the centres of L and M is about five diameters of L.

Having now finished my description of the various remains around Lough Gur, I wish, before making some general observations on circles and their surroundings, to acknowledge my indebtedness for information and assistance in my investigations in Ireland to the late Mr. William Lundon, M.P., to Mrs. Fitzgerald, with respect to the Grange circles, and to Mr. O'Donnell, regarding the Carrigalla circles.

There are some things to unlearn as well as to learn respecting stone circles, and at the present time the most important of these seems to be the idea that they are all alike and all intended for the same purpose; this idea has been fostered by four or five generations of antiquaries and travellers, who, whenever a fresh circle has come to light in any part of the world, have dwelt on its resemblances to others and ignored its differences from them. As we have seen, even in eight square miles in Ireland, there are three or four quite different types of circles, and I must remind you that these differ not only from each other, but from circles in England and Wales, and also from those in Scotland, some of which indeed differ from all others.

Since the circles vary so much in construction, it is surely not unreasonable to suppose that their objects may have varied also, yet Mr. Rice Holmes in his book on *Ancient Britain and the Invasion of Julius Cæsar* (note on p. 211), complains that Mr. A. L. Lewis "seems to be satisfied with almost any kind of orientation; thus he tells us that of 21 circles which he observed in Southern Britain, 19 had a special reference to the north-east, that is to the midsummer sunrise, but he maintains that a line due east through the Stannon and Fernacre circles to Brown Willy, evidently was meant to indicate the equinoctial sunrise; and in another case he insists that the object pointed at was the pole-star." In view of what I have been able to show in this paper, and of the fact that what I have stated now is

only a small addition to what I have shown here and elsewhere at intervals during many past years, I submit that it is not unreasonable to suppose that the sun did receive astronomical observation, or religious observance, or both, at various periods of the year in some of the circles, and that other circles, or even the same ones, may have been adapted and used for observation or observance of some star or stars. As to the pole-star, we know that it has been, and perhaps is still, regarded with veneration by some people, who even look upon it as the abode of their dead friends.

Another consequence of the great differences I have been pointing out is that it is not safe to conclude that, because some particular thing is not to be found in connection with some circle or circles, it does not exist in others, or that if or because it exists in some it should necessarily do so in all.

Mr. F. R. Coles supplies us with an instance of this kind of reasoning in the *Proceedings of the Society of Antiquaries of Scotland* (April 9, 1906, vol. xl) where, in describing a very small sepulchral circle in the island of Arran, he says, " It may be mentioned that the friends who assisted me in measuring this circle, were as keen as possible on the theories started by Mr. Lewis as to the relationship between the circle sites and any prominent hills; the opportunity of testing this was too good to lose, and I therefore noted that at a point south by compass, 64 feet distant, there stood a huge rough block of quartzitic conglomerate; if this same line were continued (also by compass) northwards we found it struck the summit of Goat Fell; again a line bisecting the centres of two stones of the circle strikes direct to Ben Nuish, a very fine peak about six miles distant; but surely the fact that these measurements and observations were by *compass,* and not by the true north, ought to invalidate them from any sort of confirmation of the theories suggested." It happened that I visited this little circle in 1899, and described it in my paper on the " Stone Circles of Scotland " read here in 1900; it is a purely sepulchral circle, only 21 feet in diameter, in which I should not expect to find any reference to sun or stars, and which in my paper I carefully differentiated from the great monuments of Brogar and Callernish where such references do exist, and I did not refer to Goat Fell, although I noticed its direction myself when I was there; since it is in a line with the outstanding stone it is indeed quite likely that the latter was purposely so placed as to be in that line; it is just seven radii of the circle from its centre, and excavations made by the side of it have not revealed remains of any kind. On the question of compass bearings Mr. Coles is in company with no less a person than Dr. Stukeley, who, in his own days, noticed the frequency with which the direction of the rude stone monuments coincided with the variation of the compass; the explanation of this, so far as points near the pole are concerned, has been given to us by Sir Norman Lockyer; it was not to the pole-star that such monuments referred, but to the rising or setting of some circumpolar star or constellation.

The evidence as to the sight lines from circles, formed by stones, other circles, and hills, is not my statement about them, but that of the ordnance maps, or of

some equally competent surveys, made by men who frequently do not agree with my interpretation of the facts; photographic evidence is also sometimes to be had, and I have in most cases verified the maps and plans by personal observation. The facts cannot indeed be disproved, but the conclusions to be drawn from them may of course vary. It is for each one to decide for himself whether they are all mere accidental coincidences, as some think, against, as it seems to me, very heavy odds, or whether they were intentional, and if they were intentional what was their object, for if they were intentional there must have been an object; and, if there were, I do not know of any but sun or star observance that has been or can be suggested.

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NATIVE WITCHCRAFT AND SUPERSTITION IN SOUTH AFRICA.

"A man cannot live without charms."—BECHUANA PROVERB.

Compiled by H. W. GARBUTT, Secretary, Rhodesia Scientific Association.

[WITH PLATES XLVII AND XLVIII.]

ALTHOUGH to the civilized mind an account of native witchcraft may be read with feelings of amusement, I think that we should remember that to the people concerned it is a very serious subject, and one that has, to our knowledge, for over 300 years had a very great influence on them.

The ordinary individual is unable to gain much information regarding these superstitious practices, and I am indebted for all my knowledge to friends in various parts of South Africa and North Western Rhodesia. Most of the notes are made up of details taken from the contributions of several correspondents. It has, therefore, not been possible to put the author's name to each statement, but their names are added at the end of the paper. I would, however, take this opportunity to thank the Rev. D. Carnegie for his notes and assistance, Father O'Neil for the description of the *i'shumba* dance, etc., and His Honour the Administrator and the Native Affairs Department of North West Rhodesia for the information from that Province.

Mr. H. J. Taylor (Chief Native Commissioner of Matabeleland) said before the Rhodesia Scientific Association in July, 1906: "The natives . . . are to a certain extent firm believers in witchcraft."

Although the profession of witchdoctor is prohibited by law and there is a heavy penalty on conviction, no native, even an educated one, would dare to betray a bone thrower, and it is difficult to get them to give evidence in court against one, for fear of being bewitched or poisoned.

Great care is taken not to be seen when casting the bones, and all such practices are to-day carried out in secret. Natives now do it on the veld, or in the grain fields and at night, instead of, as previously, during the daytime in the middle of a kraal full of people. I might mention, however, that there is no law in Basutoland against these customs.

The following five extracts will give some idea of the widespread and strong influence witchcraft has over natives in South Africa:—

The Rev. D. Carnegie (for over twenty-six years a missionary in Rhodesia),

in his paper on "Lobengula and His People," read before the Rhodesia Scientific Association in July, 1906, said, "Witchcraft was mixed and intermingled in every part of Lobengula's policy. . . . If there was one thing that led to such crimes" (the murder of Lobengula's sister[1] and seven brothers) "and cruelties it was the influence of the witchdoctor. . . . The people were led by the nose, deceived, robbed, burned to death, disinherited, driven out of the land, thrown to the crocodiles, murdered and treated in all shameful ways by the witchdoctors."

"The curriculum vitæ of the heathen Mowenda is a long succession of fear, superstition, suppression and misery. From birth to death they are haunted by their gods, by the ghosts of their ancestors, by all sorts of hobgoblins, and tremble from fear of their witchdoctors and chiefs." (*The Bawenda*, by B. Gottschling.)

One of the greatest curses of native life, perhaps the greatest obstacle to the enlightenment and true progress of the Thonga is the little basket of *divinatory bones.*

"The constant use of the divinatory bones, the dreadful superstition of witchcraft are some of the agents which lower the morals of the natives." (*The Ba-Thonga of the Transvaal*, by Rev. H. A. Junod.)

"The Batlapin, in common with all other native tribes in South Africa, had a firm belief that all deaths except those occasioned by violence and old age were caused by enchantments and sorcery." (*The Native Races of South Africa*, by G. W. Stow.)

"Sorcerers, or rain-makers, are the principal barrier the Missionary has to contend with in the interior of South Africa." (*Missionary Labours and Scenes in South Africa*, by Rev. R. Moffat.)

Divining bones are the principal instrument of the witchdoctor and are found amongst most Central and South African tribes. Before coming to this country (Rhodesia) the Amandebele appear to have used the knuckle bones of goats, stones and seeds of the *maqandabopole* tree for divining purposes, and it was from the various Makalanga tribes, whom they conquered and enslaved, that they took what we will call the four major bones and various other superstitions. They still continue to use the minor bones (knuckle bones, seeds, etc.), sometimes in conjunction with the four major bones and sometimes without.

On the other hand the Makalanga had no such thing as witchdoctors among them before the arrival of the Amandebele—they only used the bones to find out the cause of a sickness and the whereabouts of game, lost stock, etc.

The subject of charms worn by most natives round their necks, generally a small bag containing medicine to charm away lions, crocodiles, snakes, etc., and to render their attacks harmless, and for many other purposes, is outside the scope of this paper.

[1] His sister Mnceñence or Mncenguence, put to death in 1881, mentioned by F. C. Selous, in *A Hunter's Wanderings in Africa*, and by Oates. Mr. W. E. Thomas considers that Lobengula was forced to kill her owing to her assumption of royal power, and her defiance of him and his orders—there was no question of bones in the matter.

I have also omitted any account of "Medical Doctors," as their profession cannot be said to come under the heading of Witchcraft or Superstition. Occasionally, one of these medicine-men may combine the profession of rain-maker and witchdoctor. As a rule, however, their work consists in digging up roots in the veld, making medicines out of them and giving them in doses to people to drink. If they employ bones they consult them only to pretend to learn what herb or root has to be given to the patient. They, of course, know what medicine they are going to give, but the performance is carried out to give the patient a due sense of the doctor's importance. To those interested in this branch of the subject I would recommend the following two books: *A Contribution to South African Materia Medica*, by Andrew Smith, M.A.; *Bantu Folk Lore (Medical and General)*, by Dr. M. L. Hewat, M.D.; and there is also much interesting information in Livingstone's *Missionary Travels in South Africa*, 1st edition, 1857, pages 127, 171, 423, 504 and 647.

There are also various superstitions which are neither practised by any particular class of doctors nor do they come under any particular heading, such as putting a stone between the branch and stem of a tree to ensure reaching one's destination before sundown; also the custom 2,000 miles north:—"On coming from Zebir I had noticed that natives had placed round stones in the forks of trees. This was done by native travellers, as a prayer to the sun, in order to obtain sufficient daylight so as to arrive where water could be found before night came" (the Yango tribe in *Across Wildest Africa*, by A. Henry Savage Landor), tying the long grass into knots when travelling, in the belief that it would ensure getting beer and food at the kraal in front,[1] or, on the Zambesi, as a sign of mourning; the heaps of stones at the side of a path to which heap every passer-by contributes, etc.[2] The making of these heaps of stones was supposed to have originated in a rape having been committed on that spot, and every one passing would pick up a stone, spit on it, and throw it on the heap, or if a young woman jilted a man he would start a heap, spitting on the stones, believing that all passers-by spitting on stones and throwing them on the heap would cause her to want lovers and to be jilted.

For the purpose of this paper I propose to divide the remainder of the subject into the following categories:—

1. Witches.—Those who bewitch (*loya*).
2. Witchdoctors (*Izanusi*[3] and *Izangoma*)—Who "smelt out" the supposed witches who caused the sickness or death of man and beast (diviner of secrets, as Hewat calls them).

[1] "A traveller when starting on a journey ties a knot in some grass by the wayside, as he believes that by so doing he will prevent the people he is going to visit from having their meal until he arrives, or at any rate, he will ensure there being sufficient food left over for him." From *The Nandi*, by A. C. Hollis.

[2] "Close to Boulogne one passes a crucifix at the foot of which lies a heap of mouldering crosses, each made of two bits of lath tied together, deposited by passers by in the hope of Divine favour to be so gained." From *The Study of Sociology*, by Herbert Spencer; see also pp. 65 and 66 in *The Religious System of the Zulu*, by Callaway.

[3] "Etymology of the word unknown." From *The Religious System of the Zulu*, by Callaway.

3. Witchdoctors—*umHlahlo* (in Zulu *inGoboko*), equivalent to *Izanusi* and *Izangoma*.
4. Witchdoctors.—Who detected witches by striking the ground violently and repeatedly with the sharp end of a koodoo's horn (*Upondo lwebalabala*—the horn of a koodoo).
5. Bone throwers (*aba-tshaiyama-tambo*), who find out the cause and cure of sickness amongst men, children, and cattle, and of blight, etc., in the crops.
6. Rain doctors (callers for rain), (*Inyanga ze zulu*) and (*Amankazana ze zulu* and *izibizana ze zulu*), girls sent out by the older people to dance and sing when a drought threatens to destroy the crops.
7. Grave doctors (*upulamoto*),[1] who perform incantations over the grave of a dead person to cause the death of the supposed murderer.
8. Necromancers and sorcerers.
9. Sacrifices (*ugutetela*) to ancestral spirits (*amadlozi*).
10. Doctresses and dancers to the spirits (*izishumba*), who wander in the air and, in Mashonaland (*shabi*), a dance to the spirits of departed strangers.
11. *Mandoro.*

1. In Matabeleland the wizards or witches (*abaloyayo*) believed that they had the power to bewitch a person and thus cause his death. They go to the graves of the dead to pray for power to bewitch others, and believe that they get it, and that by means of medicines (roots, etc.) they can influence a person so that he dies.

When a native wished to learn to bewitch he would pay a big price to an established wizard, who would go with him to a grave and dig up a freshly buried body, cut it open and roast the liver, and teach him witchcraft.

"Their crimes are said to prevent rain falling at a certain place; the garden from yielding food; the herds, flocks, and women from being fruitful; and to cause the live stock and human beings to sicken and often to die. These ends are attempted or effected by various means. The rain is kept away by stones or bones placed upon trees in sight of the clouds. Human life is destroyed by secretly mixing poison with the porridge eaten, or beer drunk, by the person whose life is sought. Sickness is said to be brought into the family, fold, or cattle pen by certain *umuti* (poison) strewed or hid in the huts, folds, pens, or in the enclosures which surround the houses; in the paths leading to the fountain, river, or garden, or under the tree where the individuals work during the day. The poison is obtained from poisonous plants found in the land. The most dangerous and dreaded means which the *umtagati* employs to accomplish his wicked design is said to be the small dark-coloured wolf found in the land. This wolf, they say, is sent on errands of the vilest character, and is often ridden about by his master

[1] Probably derived from the Zulu phrase "*ukuBula muntu*'" = to point out a man (see Colenso).

during the night, for the sake of accomplishing his evil designs." (*Eleven Years in Central South Africa*, by T. M. Thomas.)

In Mashonaland the *mloyi* is supposed to be assisted by various agents; the most interesting seems to be the *Isituhwana* (who is believed to be the spirit of a deceased *Mloyi*, which has been captured by a living *Mloyi*, and which obeys his commands), *Dzija*, of *Simbuwanana*, "an imp, with the shape of a human being covered sparsely with tufts of hair, but possessed of only one leg." The natives believe that *it can imitate the voice of any human being*, and whoever is struck by it is sure to die. Thus ventriloquism plays an important part, and witchdoctors possessing such powers enjoy an increased reputation. The baboon and hyena are always associated with witchcraft, and the *mloyi* is supposed to ride naked on one of these to the scene of his evil work, or to the meeting of the various *baloyi*, where they indulge in the ghastly feast of unearthed human beings. Hence the practice of the Mashona to guard the graves of their dead for a time. Or he walks about with an owl perched on his head or shoulders. This bird is viewed as an evil omen, and cases are known where the natives moved their kraals because an owl had sat on one of the huts.

In "A Few Sayings and Omens," contributed by Mr. R. E. Dennett to the Liverpool weekly, *West Africa*, he writes of the Fyat tribe—"Then, concerning owls, see that your camp at night is not disturbed by the *kulu* (spirit of the departed), that warns you that one of you is going to die."

In *Garenganze* (*N.W.R.*) by F. S. Arnot, "Many have a superstitious dread of the horned nightowl. Its cry is considered an evil omen which can only be counteracted effectually by possessing a whistle made out of the windpipe of the same bird." [1]

A peculiar form of *ukuloya* (to bewitch) in Amatongaland is the administration of the love charm. It is known as *rabiya*. If a young man loves a girl, but she is averse to his attentions, he secures a preparation containing the heart of a male rock pigeon (*ivukutu*), and applies this to her person, or mixes it with her food. In consequence she gets violent fits of hysteria, and it is supposed that she only recovers in the presence of her lover, to whom she will fly, if possible. While in this hysterical condition the girl emits a sound like the call of the rock-pigeon—"*vu, vu, vu, vu,*"—which is often continued for hours. Whatever truth may be attached to the charm, the girl certainly becomes exceedingly excited, bites and scratches anyone who attempts to hold her, and is deaf to all reasoning.

These witches and wizards are the people whom the witchdoctors are ostensibly supposed to "smell out," but the victims were not always "smelt out" for occult reasons. In some instances it might be someone whom the chief wished to punish for some crime, but who was too powerful or too clever for his guilt to be proved, or in another case, it might be someone rich in cattle and wives, and through jealousy and

[1] "The creatures found in caves used for burials, come to be taken for the new shapes assumed by departed souls. For bats and owls being conceived as winged spirits, arise the ideas of devils and angels." From *An Epitome of the Synthetic Philosophy*, by F. Howard Collins.

cupidity his neighbours have arranged for him to be "smelt out" so that they can divide his possessions. It was a convenient weapon for a native chief, as he could thus remove a troublesome member of the tribe by a recognised and legal process.

2. Witchdoctors.—The profession of witchdoctor is practised by both males and females, and, before the natives were under European rule, they only practised with the king's permission. Their influence is strengthened by their keen powers of observation and a most retentive memory, especially for trifles.

The chief witchdoctor in Matabeleland was Zondo, who came into this country with Umzilikazi in 1836 or early in 1837. He lived west of Shiloh on the Umguza River during Lobengula's reign, and was the final court of appeal in all cases before they went to the king for his verdict. Zondo from his position naturally had great influence, and was often consulted with regard to supposed witches. All the *Izanusi* under Zondo worked into each others' hands and were all "in the know" when a case was on.

In trying a case the witchdoctor dresses up in a fantastic fashion with all sorts of skins of wild beasts tied round him, snake skins and bones of various kinds are hung on his neck, inflated sheep and goat entrails are fixed on his head, the whole completing a weird, horrid picture, and, as the native name for witchdoctor in the Colony means, "Something fearful to look at." His appearance alone was sufficient to scare the life out of anyone, but especially terrifying to those before whom he is going to perform, knowing as they do, that when he finished, death awaits some innocent person or persons.

"A cap . . . or any sort of clothing worn by such a person until it has become perfectly saturated with filth, is considered the most infallible cure for all kinds of diseases, poisonous bites, etc. On emergencies a corner of this treasure is washed, and the dirty water thus produced is given to the patient—beast or man—to drink." (From *Lake Ngami*, by C. J. Anderson.) This is also done in Matabeleland.

Before the case begins the witchdoctor has probably been bribed by the gift of an ox or a sheep to select as the wizard (*umtagati*) a particular man, generally one with large herds or flocks or against whom a few have laid their plans, so that they can divide his cattle, wives, and children If Lobengula considered that the accused man was innocent he would refuse to have him killed, and might tell him to remove and live at another place.

Before commencing, the witchdoctor makes the people sit before him in a semicircle, and something after the following conversation passes between him and the people. The witchdoctor, speaking in a very dignified voice, and dancing in front of the people, who are exceedingly afraid of him, says:

"I hear there is witchcraft among you people here assembled. Is it not so?"

People.—"Yes, it is true."

Witchdoctor.—"The witch is also here among you. Is it not so?" And so the conversation goes on until he comes to the point and fixes upon the victim, saying, 'That is the man, he sent the witchcraft among your children, he sent the owl to

hoot on the tops of your huts, he is the wolf who prowled round your kraal to bewitch you all and kill your cattle, he—that man there—went to the kloof of the mountain to meet the wolf, and rode on his back so as to reach your kraal to bewitch you; he is in league with wicked spirits, wolves, and snakes—that man, he is the witch, it is not fit for him to live—do you agree to this? Say so all of you with one voice." The people, or at any rate the majority of them, shout, "We all agree!" and the innocent man is, with the consent of the king, sent to his death.

This short description may give some idea of a "smelling out" case, but to describe it from beginning to end would be wearisome. There was so much cunning, deceit, lying, and devilry about it that the details are best left out. It was one of the blackest blots of heathenism, and accounted for most of the horrible crimes which were committed not only during Lobengula's reign of twenty-two years, but in all South Africa for centuries.

It is an historical fact that the great Zulu king, Tshaka, put the *izanusi* to a practical test. He secretly smeared the ground in front of the royal hut (*isigodhlo*) with blood—an act of treason if committed by any member of the tribe. Naturally the following morning there was a great outcry. All the witchdoctors were summoned in order to discover the perpetrators of this outrage. Numerous persons were pointed out by them as the guilty party. One doctor, however, exclaimed that the *Izulu* had done it, which pleased Tshaka, and which he interpreted to mean him. The doctor in question was the only one spared, all the others were slain by their would-be victims on Tshaka's orders. It is stated that ever after, he would not order a man's execution because of having been "smelled out." Umziligazi, to prove the nonsense of witchcraft, once put a stone in his mouth to represent a swollen cheek. He then called all his witchdoctors to "smell out" the person who had done it. After several of them had smelt out their victims he spat out the stone.

3. Witchdoctors (*UmHlahlo*):—(From *Bantu Folklore*, by M. L. Hewat, M.D.) "The chief agrees to the summoning of a great *umHlahlo*, *i.e.*, a great public dance, to which selected tribes are invited and must attend. The tribes being assembled, the *Gquira*, after various incantations and probably working himself or herself (for females often take this profession) into a frenzy, will single out an individual, or even at times a whole tribe, as a guilty party, by throwing ashes over them, this act being called *unkunuka*. These parties may have been guilty of, say, causing sickness in the king's household, making one of his wives miscarry, or, in the case of a tribe, having assisted in the escape of a fugitive.

"Those proclaimed guilty at an *umHlahlo* by means of the *ukuNuka* (the throwing of ashes)—the sign of being 'smelled out'—are often summarily slaughtered, or at least severely punished, often with horrible tortures."

When the Inyamayendhlovu regiment (Rhodesia) went to the head witchdoctor (*sanusi* or *sangoma*) Zondo, they were said to *umHlahlo*. They were made to leave their assegais and guns a long way off. They went up to Zondo's kraal and formed a half moon, with Zondo sitting in front of the middle of the half

moon. He drank beer out of a small calabash, then he jumped up and first said one thing and then another—not using any ash, as the Zulus did—but eventually "smelt out" five persons as wizards who were killed for witchcraft. Lobengula did not wish to kill these particular men, but the *induna* of the regiment (*Pahla*) and two of Lobengula's brothers were determined to have them killed, and Lobengula had at last to give way.

At this ceremony (*umHlahlo*) the witchdoctor (*sanusi* or *sangoma*) would make a statement to which the assembled people would *vuma* (*vuma* means to consent or say yes). Those in the know would lead the *vuma*-ing, and they would *vuma* only a little if the witchdoctor was on the wrong track, but if he got on the right track they would *vuma* loudly.

The *Gqira* or *Dqiha* was not known to the Mandebele.

4. Witchdoctors (those who threw the *Upondo Iwebalabala*).—Some witchdoctors, when called to ascertain the cause of sickness, etc., do not throw the bones but stab the ground with the point of a koodoo's horn. The horn (*pondo*) is first filled with medicine—some to be taken, and some simply to drive away the ghosts or spirits (*imikoba*). The ground is struck by this horn with great violence, and the doctors work themselves up into a state of great excitement before giving their revelation.

The Makalanga call the medicine horn *lunyanga*, which is the Sikalanga word for horn, and the medicine they call *gona*. The Mashuna call the horn *vunyanka*. There used to be a famous woman living on the outskirts of Empandene who practised this.

5. Bone Throwers.—Bones (*amatambo*). To throw the bones, *ukuponsa amatambo*.

"This superstitious practice, just as it was described more than 300 years ago by the friar Dos Santos, is still prevalent and firmly believed in." (McCall Theal, p. 101, in *History and Ethnology of South Africa before* 1795.)

The profession is more or less confined to sickness among cattle, sheep, goats, men, women, and children, to lost property and food. It may be practised by either male or female, but is generally handed down from father to son. The son, when young, is given certain medicines to drink. At night he dreams that he finds out wonderful things by means of the bones. The father continues to give him medicine, and in due time the son, after he has proved to his father his ability to discover the cause of, and cure for, the sicknesses of people and animals, is proclaimed a bone thrower. To test his capabilities a stick or stone is hidden in a hut or corn bin in the kraal, or in the fence surrounding it. The discovery of this stick or stone is another proof of the power of the bones to reveal the thoughts of men and women.

Minor bones.—I have one set consisting of three sea shells (one, a cowrie) ten carpal and tarsal bones of ungulates, two pieces of carapace and plastron of tortoise and the toe-nail of an ant-bear. The claw of the ant-eater stands for death (*M.D. and D.D.*, by A. Werner in *African Monthly*, April, 1909). Another set lent to me by

the Chief Native Commissioner of Matabeleland consists of the following forty articles:—A duiker horn with the open end filled with wax and beads, femur and humerus of tortoise, and two small pieces of carapace of tortoise, four half seeds of *um-goma* tree (Kalanga name), or *um-ganumapoble* (Matabele name), two small pieces of carved wood (Fig. 1) and a twig, a pair of pisiform and a pair of calcaneum bones (from wrist and ankles) of baboon, sixteen *astragali* of goats, four sea shells (one cowrie), four claws of leopard, one broken clinical thermometer in case, and one round white stone. Probably there may be some medicine inside the duiker horn, but it has not been opened. Possibly it is similar to the horn and contents mentioned in the following extract:—

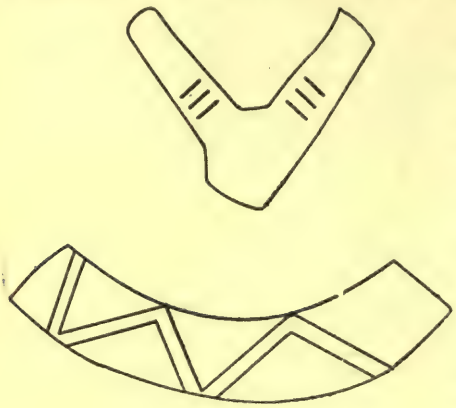


FIG. 1.

"One of the articles obtained was a small antelope horn called *egona* or *igona* in which was a mixture of ground-nut oil and a medicinal bark known as *unchanya*. The concoction is taken out on the end of a stick termed *mutira*, and administered to the patient by dropping it into his ear. The doctor stated that it was a sure cure for headache." (*On the South African Frontier*, by W. Harvey Brown.)

The round white stone, which will be met later amongst the bones from North-West Rhodesia, reminds one of the white pebble mentioned by the Rev. Mackenzie, in his book, *Ten Years North of the Orange River*: "A certain white pebble . . . is thrown into the courtyard of a rival, in the belief that it will disorder his ideas, turn and warp his judgment, so that his followers shall forsake him, and he becomes a prey to his enemies."

Round white pebbles, no doubt of a magical character, were occasionally found in the Round Barrows at the beginning of the Bronze Age. They were in all probability used as magic stones.

"In the Highlands to-day similar curestones are still cherished. They are considered as precious heirlooms, and kept carefully wrapped up in the choicest and most expensive cloth. Moreover, one way of using them is to make the patient drink the water in which they have been dipped."[1] (*Romance of Early British Life*, G. F. Scott Elliott.)

"Amongst the Ba-Thonga the astragalus of the goat, the he-goat and the kids

[1] "The ancient Irish had also a custom of burying white stones or lumps of quartz crystal with the dead, these are by the peasantry of the North of Ireland sometimes called 'Godstones.' A cemetery of stone-lined graves near the ancient burial ground of Saul, County Sligo, was literally filled with pieces of angular-shaped white quartz, and similar fragments accompanied almost every interment in the Carrowmore series of rude stone monuments. These white water-worn pebbles, or quartz stones, serve to identify the human remains as belonging to a very ancient period of sepulture," *et seq.* From *Elder Faiths of Ireland. Pre-Christian Traditions*, vol. i, by Wood Martin.

represent the mother, the father and the children of the kraal where they stay, those of the wild pig the spirits of the deceased, viz.:—the gods who have been buried in those mysterious forests where the wild pigs dwell; those of the small antelope which goes about at dark represent the witches, who bewitch people during the night." (*The Ba-Thonga of the Transvaal*, by Rev. H. A. Junod.)

With the Ba-Ronga the divinatory bones are consulted—with regard to the adjudication of an inheritance—"should the astragalus of the goats fall in the right position, should, moreover, the astragalus of the duikers and other beasts of the bush fall far away it means that the old women of the village (the goats) will be pleased and that the adverse influences from outside (the duikers) are not to be feared." (*The Fate of Widows amongst the Ba-Ronga*, by Rev. H. A. Junod.) According to M. L. Hewat, in *Bantu Folklore*, the Kafirs use similar bones, but they are variously coloured.

Major bones.—These bones, in Matabeleland, are generally made from the teeth of elephants, hippopotamus, and wild pig (*ingulube yeganga*), and are always of the same shape and have the same designs by which they are easily recognised.

"It (the apparatus) consisted of four pieces of bone, carved and strung together; by them he professes to foretell what luck will befall a hunter or anyone else. They are unstrung and shaken in the hand, and then thrown on the ground. The person going to hunt must spit on the ground, and as he throws he must say, 'My gun! may I shoot something?' The bones as they are hung, appear about the size and shape of a swallow-tail butterfly." (*Matabeleland and the Victoria Falls*, by Frank Oates, F.R.G.S.)

The four bones of the Mashona tribes are of wood. The design of one bone is always a representation of a crocodile, the other three probably vary (Plate XLVII, Fig. 2).

The four bones of the *Batoka*, *Batotela* and *Baleya* (North-Western Rhodesia) are evidently intended to be fish-shaped, and, as will be seen from the photographs, they have various dots on them (Plate XLVII, Figs. 3 and 4). I mention them here as the names of these bones are somewhat similar to the local names, and they have the same significance, as follows:—

Significance.	Amandebele and Makalanga, etc. (Plate XLVIII, Fig. 3).	North-West Rhodesia.	Budla, Makorikori and Mazizuru (Mashonaland).
a.	*Kwami*	*Kuami*	*Chito-gadzima.*
b.	*Tshilume*	*Karumi*	*Chirumi.*
c.	*Lumwe*	*Insanga*	*Nokwara.*
d.	*Dagwala* or *Inagwala* ...	*Kanakosi* or *Chirongosi* ...	*Kwami.*

a. Manhood, *i.e.*, strength.
b. Youth, *i.e.*, young manhood.
c. Girlhood, *i.e.*, innocence, joy, pleasure.
d. Womanhood, *i.e.*, maternity, hospitality.

Although each bone has its distinctive name[1] there are also words to express the various combinations, for instance, *libango* when *dagwalu* and *kwami* fall with the design showing, and when *lumwe* and *kwami* turn up together, *togajima tshinakwame*, which means that the man causing the bones to be thrown is satisfied—his heart is white. When *tshilume* is the only one with the design showing they say *tshoka* which means "alone."

Families or individuals, however, appear to have sets of from four to sixteen "bones," on which they carve various designs and throw when they are in difficulty, or possibly to play games of chance. "On the evening of a new moon they will seat themselves in a circle, and the village doctor will go round tossing each man's set of dollasses[2] in the air, and by the way they turn up he will define the fortune of the individual for the month that is to come." (J. T. Bent's *Ruined Cities of Mashonaland.*) (Figs. 2 and 3, p. 544.)

Sometimes two or even four sets of "bones" are used, in accordance with the importance of the point at issue. When throwing with the wooden "bones" the doctor takes two bones in each hand and, after tapping the ends of the two bones in one hand against the ends of the two in the other hand, he tells the bones the point at issue, throws them on the ground and looks to see how they have fallen; which have the design uppermost or the reverse. He may then throw a second set in the same manner and compare the two answers, the second throw confirming or nullifying the first. When he has finished the bones are returned to the medicine bag as, when they are away from the medicines (herbs, roots, etc.), they lose power. If the bones fall with the blank sides uppermost or the reverse they say *amashangulo*, and the throw foretells misfortune, or "the diviner chews medicine, and then passes the bones in front of his mouth, that he may breathe on them; or else blows some smoke on them that he may charm them. Next he places most of the bones in the hands of the suspected witch or wizard, keeping one or two in his own hand. At a given signal they both throw the bones down to the ground, and the doctor very carefully examines the way in which the bones lie. He notes whether any bones lie on top of the others, and so forth."

"From these data he forms his decision as to whether the suspected person is guilty or not." (Dudley Kidd in the *Essential Kafir.*)

In Matabeleland the bones are taken in both hands and thrown on to the ground. The doctor may use only the "major" sets, or he may use both the "major" and "minor." But in the former case he gives his decision from the position they assume, and in the latter from the way in which they are piled on each other.[3]

[1] "Each bone has its *isibonjo* or praise-giving names, one or more." From *Religious System of the Zulu*, by Callaway.

[2] Dutch name for these bones.

[3] "The medicine men divine by counting pebbles. Lucky numbers are 2, 3, 5, 8 and 10, 3 and 5 particularly so; unlucky numbers are 1, 4, 6, 7 and 9. 1 is the most unlucky number and 4 the least so. The counting is generally commenced at 20, *i.e.*, after four groups of 5 stones each have been arranged on the ground." From *The Nandi*, by A. C. Hollis.

The question of the falling of the bones when thrown on the ground is very intricate and involved, as the reading by a diviner in one part of the country does not agree with those in other parts, and in giving you information he may be referring to criminal cases, whilst another may be referring to social questions. Needless to say the bone thrower always charges a fee.

Bones are thrown for the following purposes:—

If moving a kraal to enquire (*uku-tuta*) whether the new site that has been chosen is a good and healthy one. After having fixed on the site the doctor smears four wooden pegs with some decoction, and marks the boundaries of the new kraal by fixing them in the ground. This he does with great solemnity and after apparent consultation with invisible spirits. He also pours water on the ground. When the limits of the kraal have been defined a goat is slaughtered for the bone thrower and he receives his fee. Among the Makalanga any man can throw the bones for ordinary purposes such as the removal of a town, but, when the new site is decided on, the chief, smearing his axe with medicine, cuts down the first tree and with its branches marks out the site and the place for the principal hut.

If a relative has been lost sight of for some time, to enquire what has become of him. In such cases a certain bone will represent the person regarding whom the enquiry is being made. To tell what luck they will have out hunting.

Before going to war.—In addition to throwing the bones a medicine called *omabope* was thrown into the river to ensure success and safe return.

To predict the result of a journey. In sickness, to say whether a patient will recover. To find out the cause of sickness.

The answer to the last is generally that the afflicted one is bewitched, either by a living person, who must be discovered by the bone thrower, or by one of the spirits which must be propitiated by a sacrifice. This will mean that an ox of particular colour, black or white, or red with a tail which has its tip all white, or horns of a peculiar shape, must be killed. The blood and meat of the beast must be kept and placed in a hut during the night, so that the spirits of the sick man's ancestors may feed off the meat, and be appeased; he must also have Kafir beer brought to him, and what the spirits leave of the meat and beer the bone thrower takes to himself. A whole day or longer is sometimes required in deciding a case, especially when beer and beef are in question.

The following reading of the bones applies principally to Matabeleland:—

(*a*) *Kwami* is the most important "bone" as its position shows who brought the sickness, caused the blight in the grain, the death of the animal, child, or man, as the case may be. In certain positions it can also tell the remedy for the blight or sickness. If it falls face uppermost and the others face downwards the verdict is most favourable and means the sick will recover, the absent one is still alive, the journey will be favourable, or the hunt will be successful, according to the question asked. When throwing with regard to a new site for a kraal should

kwami and *dagwala* (*libango*) fall face upwards, the verdict is favourable, and the next best combination is *kwami* and *tshilume* (*togajima tshinakwame*).

The distinctive mark of this bone in Matabeleland is a dot within a circle with rays branching from it. (Plate XLVIII, Fig. 3, 1.)

On first seeing this mark I wondered whether it had any connection with a sun or spider myth, as these are not uncommon in other parts of Africa. Up to the present I have been unable to trace any of these myths amongst the tribes of South Rhodesia, but Alfred Bertrand mentions one in North-Western Rhodesia in his book, *The Kingdom of the Barotsi*, 1st edition, 1899, p. 277. No other writers, however, mention it, and Mr. C. Bisset of the Native Affairs Department, North-Western Rhodesia, in reply to my letter regarding it, writes :—

"Referring to the quotation from *The Kingdom of the Barotsi*, the Barotsi believe in the one god *Nyambi* and that there is no other god. *Nyambi* created *Mboa*, who was the first *Morotsi*, and from whom, of course, the nation sprang."

Nyambi is supposed to be married and his wife's name is *Nasileli*, but I have never come across the belief that the sun is *Nyambi* and the moon his wife, nor have I ever heard that *Nyambi* had trouble with the first man. Regarding the creation of the animals, the only legend I have heard is that *Nyambi* found the Barotsi country perfectly flat, with no living thing on it nor any vegetation, merely the river and flat sand. He then created the hills and put trees and grass in the country, then the animals and fishes, lastly, *Mboa* and his wife. In this belief a certain resemblance will be noticed to the first chapter of Genesis.

The nearest approach to sun worship with the Makalanga is a shooting star. When they see one they say *I-i-i Tobela*, this being one of the praise names for their Mlimo or god, whom they say is travelling about when a star falls. Amongst bushman rock paintings one finds pictures of the sun (*Arts and Crafts of the Natives of South Africa*, by Dr. Schonland), and as conquerors often take over the folklore, etc., of those they conquer, a sun myth or symbol might have been taken over by the Amandebele from another tribe.

The name of the bone, however, is the Zulu word for "my hut," and the native explanation of the design is that the dot represents the hut of the headman of the kraal and the circle round the dot represents the fence surrounding the hut.

(*b*) The next in importance is *Tshilume*. (Plate XLVIII, Fig. 3, 2.) It represents the spirits of the ancestors who have power to send trouble and sickness. Should this "bone" fall with the design uppermost the verdict is most favourable, and should the position of the other bones also be favourable the verdict will be that the claimant will have speedy success in the hunt or in the undertaking he is inquiring about.

(*c*) *Lumwe* (Plate XLVIII, Fig. 3, 3) has generally one nick at the end and incisions, but in Mashonaland there are always representations of a crocodile. Should this "bone" fall with the design uppermost and the others fall with the designs underneath, it means "escape," the sick man will escape death, the game will escape in the hunt, etc. But if it falls face upwards and *Kwami* and *Inogwana*

are also face upwards, it is absolute proof of guilt. This bone is called the "one that hears" (*ukuz wayo*). The figure of a crocodile is seen on a stone beam found at Zimbabwe, which is now in the Museum here (Plate XLVIII, Figs. 1 and 2).

"This bird and beam are undoubtedly not only in the best state of preservation of any yet found at Zimbabwe, but show evidence of more artistic workmanship having been bestowed upon them than any of those previously discovered. Up the face of the beam is carved a crocodile 16 inches long, and round the *cestus* beneath the bird's feet, which is 3 inches deep, is carved work—on one side a large double row of chevron pattern, similar to the pattern on the east wall of the Elliptical Temple, and on the opposite side a single row of chevron, surmounted by two large embossed circular discs; the back edge of the beam is plain, and the front edge above the crocodile has two small embossed circular discs. The bird stands 11 inches high, the total height of the beam and bird being 5 feet 5 inches, its width 8 inches on the flat side and 2½ inches on its end edges." (From *Great Zimbabwe*, by R. N. Hall.)

In *The Native Races of South Africa*, by G. W. Stow, we read, "The Siboko of the ancient stem was the crocodile, even before the lifetime of the chief Kuena, the special founder of the Bakuena proper. Kuena lived twenty generations ago."

As Professor Keane points out, "the Be-Chuana must have crossed the Zambesi from the north at a very early date, because of all the south Bantu groups they alone have preserved the totemic system." (A. C. Haddon, M.A., Sc.D., F.R.S., "Presidential Address delivered at Cape Town before Section H—Anthropology—of the British Association.")

In the *Journal of the African Society* there is a paper by J. H. Venning on Rhodesian Ruins. At the conclusion of his paper Mr. Venning writes: "The eagle was the sacred bird of the Varoswe and is to-day believed by the Mashona to carry the spirit of their chiefs. On the beams on which these soapstone birds are carved is to be seen the sign of the crocodile, which was the Varoswe symbol of witchcraft, and is the principal sign of withcraft amongst the Mashona. It will be found on all the divining bones which are called by the name of *Hakata*." (Called *Akata* by W. H. Brown in *On the South African Frontier*.)

(*d*) The distinctive mark of *Dagwala* is two nicks at the end and incisions. When thrown should the design on this bone show, and not show on the other bones, the matter is regarded as dubious, perhaps the patient may recover, perhaps the hunt may be successful, etc.; but should the design not show, the indication is favourable (Plate XLVIII, Fig. 3, 4).

The Mazizura, Budhla, and Makorikori tribes read the bones in the following manner. The names of the bones reading from left to right on Plate XLVII, Fig. 1, are:—

1. *Chirumi.* Signifies manhood.
2. *Chitogadzima.* Principal bone, health and strength.
3. *Nokwara.* Signifies womanhood, girlhood.
4. *Kwami.* Maternity, the second bone in the set.

With the exception of *Chitogadzima*, bones in different sets appear to be marked differently, but *Chitogadzima* is practically always the same, and is meant to represent a crocodile.

The seeds of the *umgoma* (*mungoma*[1]) are also used as bones, but no marks are made upon them, they being read by the natural markings only; there are six seeds in a set, but they have no names, and are used in cases of sickness only to determine the cause.

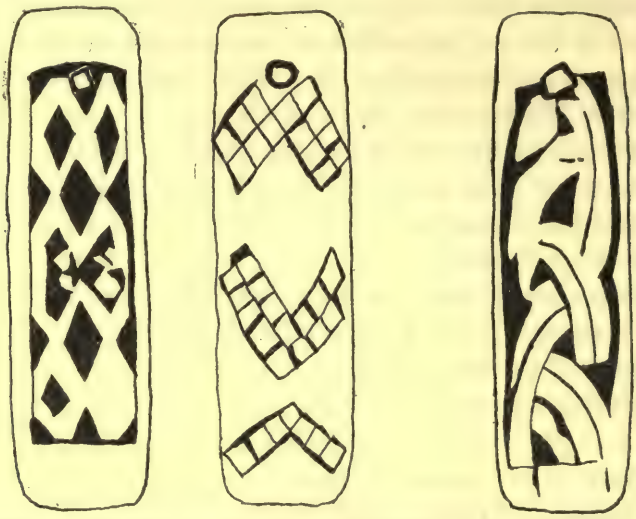


FIG. 2. SPECIMENS OF DIVINERS' BONES USED BY INDIVIDUALS FOR GAMES OF CHANCE (p. 540).

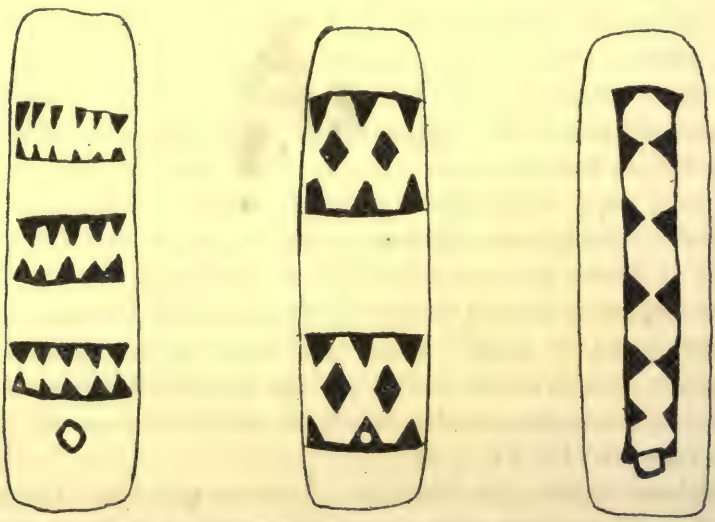


FIG. 3. SPECIMENS OF DIVINERS' BONES USED BY INDIVIDUALS—NOT DOCTORS—FOR GAMES OF CHANCE (p. 540).

The Bujya (M'toko District, Mashonaland) tribe read them in this way. To throw them, three are taken in each hand, the bones in the right hand are thrown upon those in the left hand and all are allowed to fall on the ground. They

[1] Probably a species of *Erythrina*.

are then examined to see how many are lying on their faces and how many on their backs. One on its face and five on their backs is called *Chriumi* (little man). "If you are going out hunting you will find no buck." "If a girl is sick she will recover." Two on their faces and the rest on their backs is called *Mawi*. "You will have a prosperous journey." Three on face is called *Mtatu* or *Chitokwadzima*. "If you are going courting you will be successful." "If you are looking for something you will not find it." Four on their faces is *Nokwara* or *Hopé* (sleep). "If you are looking for something you will find it." Five on their face is *Kwami* or *Karomo*. "You will not have a prosperous journey." "You will have quarrels." "You will not find what you want." Six on their faces is *Zungamana*. "If a man is sick he will not recover." All on back is *Zaru o ku seka* (laughter). "You will have good luck." "You will be friends with every one you meet on the road."

The other bones are named separately—*Kwami*, *Chitokwadzima* (or *Ngwena*, "crocodile"), *Chirumi* and *Nokwara*. They are thrown in much the same way as the other bones. They are practically the same as those used in the Chilimanzi and other Makaranga districts of Mashonaland.

The natives say the names given to the bones are traditional and they cannot explain them.

The major bones are made from the wood of the *Mutara* tree. It is not a sacred tree amongst the Mazizuru, but is used to surround cattle kraals to keep lions out, and there is no superstition attached to it.

North-Western Rhodesia. Throwing Bones. Makakata (*Sitoka*), *Litaula* (*Sirotse*).—These bones are used by the Batoka, Batotela, Baleya, and possibly some tribes further north, but they were not used by the Barotse or Masubia (Plate XLVII, Figs. 3 and 4). No. 1 is a male named *Kuami*. When the bones are thrown and *Kuami* alone falls with marks uppermost it denotes very bad luck in any undertaking, and adventures with wild beasts if on a long journey. Should marriage be contemplated it should be postponed. Should, however, the bones be thrown for an Induna or chief, quite the opposite is denoted.

No. 2 is a boy, or more properly a young man, named *Karumi*. When this bone alone falls face up it refers particularly to marriage, and denotes that everything is favourable, that no divorce is likely to occur, and that a male child will be born.

No. 3 is a young female named *Insanga*, and, like No. 4, denotes pleasure this bone is an assistant to No. 4, and its business is to accentuate the decisions of *Chinongosi*, should they both fall face upwards; should, however, *Insanga* fall face down and *Chinongosi* face up, *Insanga's* verdict is overruled by that of No. 4. Should it fall away from the others it indicates, in case of sickness, that the sick person will recover quickly, or, when hunting, that lots of game will be found and killed.

No. 4, named *Chinongosi* or *Kanakosi*, is a female, and represents joy and pleasure, and when on throwing the bones, it alone falls with the holes uppermost

it brings good luck in any undertaking; as, for instance, should a long journey be contemplated, it may be undertaken with confidence that no misfortune will occur.

No. 5 is a stone found in the stomach of an elephant, and when bones are thrown this stone is laid on the ground close to where the bones fall and lends them very special virtue.

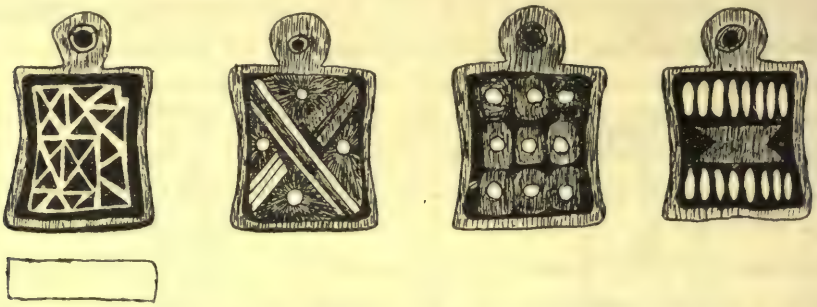


FIG. 4. DIVINING BONES IN THE POSSESSION OF THE STOREKEEPER AT IGWENIA IN 1900. SUPPOSED TO HAVE BEEN USED BY NATIVES FROM LIALUI (N.W.R.) ½.

Natives when hunting and following the spoor of an animal either wounded or unwounded generally carry a set of bones with them, which are frequently thrown to find out how far away the animal is. Should No. 1 alone fall with marks uppermost the animal is near and will be overtaken and killed. Should it, however, fall face downwards the chase is immediately abandoned, as the animal has gone too far. This refers only to occasions when the spoor is rather old, say twenty-four hours, but when the spoor is perfectly fresh or there is wet blood, or any such unmistakable signs of the nearness of the animal are seen, then bones would not be used. *Kuami* decides all questions in connection with hunting, no combination of the remaining three bones having any power of contradiction.

Various Combinations of Bones.—In the case of sickness in a male, should *all* the bones fall face downwards (*i.e.*, spots or marks underneath) the sick man is abandoned as past help, and no further efforts are made to restore him to health; should *Kuami* alone fall face up (on the *second* time of throwing) there is just a possible chance of his recovery; should, however, Nos. 3 and 4 alone fall face up a speedy and complete recovery may be expected.

Theft.—When an article or animal is stolen, bones are thrown before the people of the kraal to which the stolen article belonged, with the object of ascertaining the advisability or otherwise of attempting to discover the thief. Should *all* the bones fall face downwards it is useless to look for the thief, as he will not be found. In the event of all the bones falling face up it is obviously a member of the kraal who has committed the theft. Should *Insanga* and *Karumi* and *Chingongosi* fall face up the thief may be sought for with every prospect of being found. The actual finding or searching out is done by far more powerful medicines, and bones are abandoned.

Witchcraft.—Bones are only used to discover whether or not witchcraft is

present, they are never used to point out the witch. On being thrown should the bones all fall face up it denotes that in some form witchcraft is present; at this point bones become useless and a witch-finder is called in.

Fortune Telling.—The four bones are held in one hand and jerked up and down while a song is sung to them in a low voice. The following is a fair specimen of the usual form of the song (Chabaranda is merely a specimen name):—

"I, Chabaranda, am the opener of roads,
I am the pointer out of ways,
When the white man calls I only am not afraid,
Who but Chabaranda can tell the white man the story of the bones, yet find no harm?
Tell me truly of this white man's life, will his ways be clear, will his children and his cattle be many?
Tell me truly will he find sickness or health?"

The bones are now thrown, each combination having a special name, of which the following are seven specimens:—

Karumi mo mo sanguru.—*Karumi* in this instance alone falls with its marks uppermost, all the others being face down, and in falling separates itself from the others and falls alone, and nearer the person whose fortune is being told (we will call him A) than the other bones. This denotes a very very long life, and *Karumi* must at once be rewarded by a fervent kiss.

Mabi.—*Kuami* here separates itself from the others and falls nearer to A than to them, showing that A is of royal blood or will become a member of a royal family.

Kuami mo sangu.—In this instance *Chinongos* falls face down and nearer A than the others. This speaks of a life free from all trouble for A. Should *Insanga* fall face up between *Chinongosi* and the other two, then A's life of pleasure is certain beyond all doubt, because *Insanga* falling in that position becomes *Chinongoi's* guard against the evil influence of *Kuami*.

Karumi mo Chinongosi.—*Karumi* and *Chinongosi's* falling together and face up denotes bad luck and sickness for the herds and flocks of A.

Masunguru.—*Chinongosi* alone falling face up announces that A has been long married.

Mabui.—This is very unusual, and therefore of great importance. All the bones fall face up and quite near together. This shows that A will live and die in his own land among his own people, that his life will be even and that he will never experience any great pleasure or pain, and that he will fill satisfactorily the position in which he was born.

Marumi a bili.—In this case *Kuami* and *Karumi* alone fall face up. This predicts that A will attain to great power in some country and have very many people under him.

Rain Making (M'toko District, Mashonaland).—Witchdoctors are not usually consulted as to rain.

Every tribe has its own Mondoro or protecting god, and there is always a medium through whom he speaks. If rain does not come when it should, then all

the women in, say, one kraal take small baskets full of grain to the hut of the oldest woman in the kraal, who must be of the same *M'tupo* "totem" as the tribe of the Mondoro. She then takes the grain to a flat rock and finds a hollow place into which she pours all the grain, and takes a dipping calabash and walks round the grain and calls upon the Mondoro to send rain because his children are starving. They then wait a few days and if rain does not follow, the whole kraal proceed to the kraal of the medium of the Mondoro, and offerings of snuff are made to her and she is requested to call up the spirit of the Mondoro and ask him what the people have done wrong that no rain has fallen. The medium retires to her hut and the people remain outside all night waiting for the spirit to enter the medium. This usually happens in the early morning, when the medium comes rushing from her hut foaming at the mouth and shouting out to the people, who all follow her and ask questions as to what is to be done to get rain. The medium may tell them that they have offended the Mondoro in some way and must make an offering of a goat, head of cattle or a hoe, and if this is done then rain is sure to follow.

The Lion God of M'toko.—As a matter of fact there is no such *Mondoro*. The *Mondoro* of the M'toko people is *Nemaouyo*, and he has his medium through whom he speaks, as do the *Mondoro* of all the different tribes. The Lion God of M'toko is mentioned by Bent in his *Ruined Cities of Mashonaland*, and by other writers; but where they got their information from I do not know. When I first came to the M'toko I heard plenty about the Lion God, but only from white men who had been in the M'toko country; since then I have had lots of opportunity of going into this matter, having been fifteen years in the M'toko district, and I have come to the conclusion that the whole story is a myth, or a story concocted from scraps of information on different subjects. The "M'tupo" or totem, name of the Budhla (the M'toko people) is *Shumba* (lion). Here you get the reason for "lion god," but there is no such god or prophet known to the people themselves. We are also told that the *Makanga*, in the angle between the Shire and Zambesi, refrain from killing lions, believing that the spirits of dead chiefs enter into them. (*British Central Africa*, by A. Werner.)

The native chief Chaminuka enjoyed a great reputation as Mondoro, not only with the Mashona, but also amongst the Amandebele. It was reported to Lobengula that he could, among other things, hammer wooden pegs into rocks, or produce any animal, such as the lion. Lobengula sent for him, but eventually ordered him to be killed, being afraid of him. According to the native ideas, the various attempts on Chaminuka's life failed, until he himself agreed to die. He was skinned by Lobengula's orders. His spirit is supposed to have entered several persons, making its final appearance in a woman.

Shabi is the spirit of a person of another race and, with one exception, is supposed to protect and assist those who believe in it. Every native man and woman have their Shabi and wear on their person ornaments or certain kinds of skins or different coloured calicoes, according to the requirements of their particular Shabi.

The following are a few of the *Shabi*:—

Shabi ra Mazenda.—This is the spirit of Shangaan natives who died or were killed in this country (during Nyamandi's raid); this Shabi enters only into women, but it is possible for women to have other spirits as well as this particular one.

This spirit is said to give warning of approaching danger to its believers, and to be a protecting and assisting spirit unless neglected, if neglected it is said to cause trouble in the family or sickness; when a women of the *Mazenda* spirit gets sick, the bones are thrown, and if it is decided that the *Shabi* is the cause of the trouble, offerings must be made to the spirit that is in the woman and troubling her; there is a gathering of the women in the kraal who are also of the same *Shabi*, an offering is made of a fowl (a cock always), strings of bark twine made into a necklace, and a monkey skin; these are placed in front of the woman troubled by spirit, and the other women dress themselves in monkey skins and put a *Jukura* (a head-dress in the form of a pom-pom made from reeds and guinea fowl feathers) upon their foreheads, and carry dancing axes (*Zombas*) in their hands; they dance around the person afflicted by the spirit, calling upon the spirit to come out of the woman and leave her in peace; they work themselves into a great state of excitement, and it is dangerous for the men to go near them when they are going through this dance; I have seen them falling down and foaming at the mouth like a person in an epileptic fit; during the dance the fowl offered to the spirit is killed by having its throat torn out by the teeth of the women at the dance; the woman troubled by the spirit is the first to bite the fowl and is followed by the others; the fowl is then cooked and eaten by the women present. The necklace of bark twine and monkey skin has to be worn by the woman afflicted.

Shabi ra Mazungu.—This is the spirit of Portuguese who have died in the country; this spirit is common to both men and women, if in a man it assists him in hunting and in trapping and spooring game, if in a woman it makes her strong and able to work; the offerings of this spirit are red and blue calico and an *Ndoro* or shell worn on the person.

The other *Shabi* which assist in hunting are, *Shabi ra Maziti*, which is said to have been brought from the north by vultures; the offerings to this spirit are red and blue calico, a shell and the tail of a zebra, ox, or antelope, but zebra usually. The second spirit is that of Amandebele warriors who were killed in this country; the offerings are red and blue calico, monkey skins, and a stabbing assegai.

There are many other *Shabi*; *Shabi ra Mafaine, Shabi ra Mavukutiwa, Shabi ra Masangano.* They are all good spirits, and when one dance has been described it would only be repetition to describe the others as they are all practically the same.

Shabi ra Chiti.—This is an N'gozi or evil spirit, the spirit of a native man or woman who has died or been killed on the veld and whose body has not been buried, and whose bones have been scattered by wild animals or birds of prey.

If this spirit is not settled it causes great trouble to relations of the deceased, if offerings are not made all sickness or death will be attributed to it; the spirit is appeased by a goat being killed and the head wrapped in blue calico and buried; this represents the burying of the body of deceased; if a native out hunting should happen to walk over the place where the body of a native has been left without burial, great misfortune will follow; if a married woman should happen to do the same she will have no children, if a young girl she will never get a husband, and if a child it will never grow any bigger.

RAIN DOCTORS (*Inyanga ze zulu*) and CALLERS FOR RAIN (*amankazana we zulu*, or *bizibizana we zulu*).—The king is the chief rain doctor, but the profession is not necessarily practised by males only. One of the most famous rain doctors was Modjaji, a chieftainess who resided in the Northern Transvaal. She died about twelve years ago, and is supposed to have reached a very old age. She was consulted by envoys who came even from Zululand and Basutoland. It is reported that, when a girl, a Portuguese who claimed to be the "son of God," desired to marry her, but the members of her kraal succeeded in making him intoxicated and carried him away. Modjaji ever after refused to appear in public. It was said she had four breasts, and she was credited with being the source of the locusts.

The *Itsugwana* were girls sent out to call (*biza*) the rain, when the growing crops are threatened by drought. They were almost naked and were striped with ash like zebras. They ran about from kraal to kraal, beating drums and singing songs all along the edge of the cornfields, and on reaching the leading kraal of the neighbourhood, or on returning to their own kraal, the headman gave them corn which they would make into beer. This is one of the songs:—*Ngayine, oya, eya, umjabela, eya, tsokwana, eya, eya, makaule.* The general sense of which is:—

> "Oh, it's beginning to rain,
> Let it rain very much
> Without stopping for a long time.
> Let it rain, we rejoice."

There was a man in the old times who was said to be able to make rain, his name was Makaule, and that is why his name is introduced into the song of the *itsugwana.*

7. A GRAVE DOCTOR (*U-pulamoto*).—This profession was not known to the Amandebele or to the Makalanga, except by hearsay—it belonged to the Benanzwa (Zanki's people), and when Umziligazi killed old Zanki (called erroneously Wanki) a man named Sisuma fled to Khama's country, where he introduced and practised the custom of *tjay'iliba* (strike the grave). It was practised in this way:—

In the case of a sudden death a well-known doctor is called to go and perform incantations over the deceased so as to cause the death of the murderer or the man who bewitched him. When the doctor has agreed, generally for a heavy fee of three or more head of cattle, "to strike a grave," a goat is slaughtered at daybreak by the person who is engaging his services. After dark the doctor, with the relations of the deceased, goes to the grave by secret paths, and not by beaten tracks, for

fear of being observed, takes away the branches over it and leaps about with fantastic contortions, finally falling down in a pretended fit. He then rises and blows into the hollowed forearm of a man (radius, *udweba*), scratches some of the earth away from the grave in various places, and puts medicine into the holes thus made. He then strips off his clothing, blows the *udebwa* again with all his force and calls on the dead man to arise. He then returns to the kraal of the person who engaged him, and tells him that the person who bewitched the deceased will now die from sunstroke, the bite of a snake, lightning, or from internal bleeding. Needless to say, the next person who dies of a curious malady or by accident is considered to be the one who bewitched the person whose grave was struck by the doctor. The goat is cooked and eaten close to the grave by the relatives and the doctor. The natives call the doctor "he who performs a difficult work."

8. Necromancers, Sorcerers.—These people have been described so often that they are well known to every one in South Africa. They think they have the power, by certain movements of their hands over the body, to extract the cause of the sickness. The following is a description of a local case:—A woman, who was suffering great trouble from a cough, went to one of these conjurers. After passing his hands several times over her head, chest and body, he produced a small ball of goat's hair, which he declared was the witch who was causing the cough. A common method is to make an incision in the back of the sick person, suck the wound, and then produce a caterpillar or some other small beast which was previously in the doctor's mouth.

"The Australian *Koondie*, while exercising all that he knows in the way of medical practice by horrible stews and by massage, beats the hands of his patient with red coals, mutters horrid sounding incantations over him, and finally produces something (it may be a bit of wood) that has bewitched him." (*The Romance of Savage Life*, by G. F. Scott Elliott.)

9. Sacrifices.—Should a person fall sick and the bone thrower be consulted, he will probably say that the malady is caused by an ancestral spirit, and that the relatives must make a sacrifice (*tetola*) to the spirits if they wish to save the life of the sick one.

The word *amadhlozi* means disembodied spirits, of which there are two classes—good and bad. Lobengula told the Rev. D. Carnegie that the Amandebele believed the good spirits all lived round about the towns in the pleasant parts of the country, and the evil ones were forced to live in the malarial and marshy places, in the unhealthy swamps of the wilderness alone by themselves. The good ones lived in a "happy hunting ground," the bad ones in a howling, horrid wilderness. At the ceremonies of the great dance Lobengula was said to offer human blood to the spirit of his father Umziligazi, but this has never been proved. He prayed to the spirits and the Rev. W. Sykes once heard the prayer. It was to the effect that Mlimo would give them good crops, keep away all sickness and make them conquerors in the day of battle.

The *Batjwapong* under Chief Khama are the only natives in the country who

were said at times to offer human sacrifice. When there was a drought they would waylay some man and try to strangle him; if he made a noise they at once let go of him as the charm was spoiled, but if he did not make a sound while they killed him they used his body to make rain. If he made a noise they believed that lightning would kill a lot of people if they killed him. The Amandebele and the Makalanga made no human sacrifice.

Oxen, goats, and beer were used for sacrificial purposes, not sheep, and the sacrificial animal had to be perfectly black. An animal would be called by the name of an ancestor and kept as representing his *dhlozi* or spirit, and, if it died or was killed on account of old age, it would be replaced by another.

"The interment over, 50 black oxen were sacrificed to the spirits of Umziligazi, Umatjobana his father, and Umankete, his grandfather, with those of other worthies of ancient days. By offering these cattle for the people to their gods, the officiating priest introduced Umziligazi to his father, grandfather and others, speaking of him in the highest terms." (*Eleven Years in Central Africa*, by T. M. Thomas.)

The Makalanga had a set place for praying to the spirits and propitiating them. It was called *shumba-lume*, which means "lion man" and doubtless suggests past nature worship. It is formed by three stones called "the father," "the grandfather," and the "great grandfather," but in the past it consisted of two stones and a pointed stick.

The name *shumba-lume* would lead one to suppose that it had some connection with the *i-shumba* dance described later on, but natives will not admit that any connection exists between them. As Mr. W. E. Thomas suggests, the origin of the word is probably lost in antiquity.

This place must not be confounded with the platform called *ishumba-ulu* (a species of *terminatia*), which is made of four posts from the *umangwe* or *umsuru* tree and has stones under it. *Ishumba-ulu* denotes the top of the corn bin under the thatch roof or *tuli*, and has nothing to do with the place for sacrifices.

There are four principal sacrifices. First, with a mild native beer *imbila;* second, porridge *isitsheza*; third, a living goat (*uku-tetela ngembuzi ezwayo*); and, fourthly, and most commonly, by a goat that is killed.

When the Makalanga make a sacrifice of beer it is placed in a small pot, *udiwo*, near the *shumba-lume*. The pot is turned round and round by the person offering the sacrifice, and at the same time they sing to the spirits, "Behold the beer which we offer you, that you may drink and be filled, together with your relations and children" (*namp utshwala esikunika bona, udhle usute, zidhle lezinini zako, labatwana bako*). The beer was then poured out and the little children would lap up as much as they could from the ground. When this was over everybody would take a little white Kafir corn in their hands and dash it down. On some occasions the beer may be put into a wooden bowl (*umganu*), and another bowl, smeared on the outside with ashes, is put on the *udiwo* as a lid.

The porridge is offered in the same way as the beer, or the woman who cooked it may bring it to the *shumba-lume* and distribute it in wooden bowls to those

sitting round, after first sprinkling a little meal over them and saying *bamla jigwa, swini swangu*, etc., or some other formula. This is probably "woman language" which is a contortion of their language and is only understood by the women. Before they eat the porridge the woman says the same as is said in the sacrifice of beer, viz., *nank ukudhla*, etc. When the porridge is eaten she piles the bowls near the entrance of her hut and thus addresses the spirits:—"Please leave off doing this, *i.e.* sending sickness or hunger—let us have food; we are on the veld" (*akukaule kwenza nje: kasipiwe ukudhula sisegangeni*). The Makalanga do not offer porridge but throw boiled whole grain down on the *shumba-lume* which is eaten, as the beer is drunk by the children, on hands and knees, from the ground.

To sacrifice the living goat, it is brought to the platform at sunset and the person making the offering fills his mouth with water and squirts it over the animal after putting the goat into the goats' kraal.

The most general way is to sacrifice a goat by taking it to the *shumba-lume* at sunset or sunrise and stabbing it to death. After it is cooked the person making the offering says to the spirits, "Here is the meat that you like, come together all of you, eat and be filled, you and your relations and your children. Do not kill us to-morrow saying we refused you food" (*nans, inyama yako oyitandayo, siyakunika yona, libantane lonke, lidhle lisute, lezinini zenu, lababtwana benu Kasasa linga bosibulala liti kasilinikanga ukudhla*).[1]

10. *I-shumba.*—This superstition of sacrifices to the *shumba* is unknown amongst the Amandebele and is only practised among the Makalanga. Some natives say that the word *shumba* is the same as that for lion, but others deny it. Probably the former are correct, as one part of the performance by the *shumba* is to roar.

Mondoyama is the *isibongo* or praise name of these spirits, who live in a hut and are consulted by the women.

The *i-shumba* are a distinct group of the Amadlozi, and are said to inhabit the air awaiting a favourable opportunity to enter the living body of one of their descendants. The doctors of this superstition are always females.

Should a boy fall sick, it is said that an *i-shumba* spirit has taken possession of him and finds his quarters uncongenial. He must, therefore, be transferred to a girl. This transference is carried out by killing a goat and putting some of the blood into a broken vessel. Herbs and leaves of certain trees, and heated stones or burning charcoal are placed in a vessel causing a dense steam. A blanket is placed over the rising steam, and the girl to whom the spirit is to be transferred is placed under the blanket with the possessed boy kneeling beside her. By inhaling this steam she is supposed to receive the spirit, and the boy to be dispossessed. Should the boy, however, not get better they conclude that the girl was

[1] "Old men take beer and milk into their mouths, which they spit out towards the rising sun, and say 'Asis . . . look at this beer and milk.'"

"Another prayer, accompanied by libations of beer poured on the ground, says, 'Our spirits, we have prayed to you look at this beer: give us health.'" From introduction by Sir C. Eliot to *The Nandi*, by A. C. Hollis.

unacceptable, and the same performance is gone through with another girl or sometimes with the boy's mother.

In the case of a sick girl, an *i-shumba* doctoress may possibly be consulted, in which case the diagnosis will be that she must enter the profession of the *i-shumba* as she is possessed by one of this class of spirits.

The girl's father supplies a goat, and she is given a vapour bath, as in the case of a boy, but she only is put under the blankets and has no boy with her. She generally has to remain inhaling the vapour until she is almost choked, and the more she suffers the greater is the credit given to the doctoress who is performing the operation.

Whilst the patient is under the blanket the *i-shuma* woman asks her what her name is and generally receives in reply some odd name, which is taken to be the title of the spirit who wishes to enter the girl. In future this name is only known to the *i-shumba* woman and to the girl's family, who must only call her by this name when she is under the influence of the spirit. Should this name be used at any other time in her presence they say that the girl will die. When the girl recovers from her sickness her hair is cut.

After this is done all the *i-shumba* women meet and the girl goes through the final initiation ceremony. This consists of drinking a compound of raw goat's blood, tobacco juice, meat and herbs. Should this make her sick it is taken as a sign that the *shumba* spirit rejects her. On the other hand should she retain the mixture she is entitled to wear the special costume of the *i-shumba*.

The costume consists of a head-dress (*ingala*) of large red, white and black beads, sometimes decorated with two ostrich feathers, which projects until it covers half the face. A mantle of different coloured prints, and a skirt of goat, calf and lynx skins, with anklets (*amahlwai*), to be worn at the *i-shumba* dance, completes the dress. On no account must an *i-shumba* woman wear the skin of a sheep or antelope, and, when not under the influence of the spirit, she must not see any portion of her *i-shumba* costume, otherwise she will die. These garments, therefore, are generally kept in the kraal of a relative.

After receiving their dresses she and the *i-shumba* women perform the *i-shumba* dance, afterwards eating their special food, which includes the flesh of goats; sheep, hares and steinbok, however, are forbidden, otherwise the food is superior to their every-day fare. The next day they all go very early on to the veld to resume their daily names and appearances (*uku-tsemuta*). This change has never been seen and no account of it is known.

The *shumba* women will not hoe their lands if their dance has not been held, as they say that if they do not respect their spirits there will be no crops. The dances are held only at night time, and anyone may be present. Two dances take place every year—one before the lands are hoed, and one when the crops are ripe.

Before a dance the *shumba* women collect in the kraal of their head woman and a young girl is sent behind a hut where she has to call out "*ehe! ehe!*" The *shumba* women then fall down in a pretended faint caused through the spirits

having, it is supposed, rushed in and taken possession of them. They then stand in a circle round the head woman and sing. Presently they all give a loud shout, intended to represent the roar of a lion, and the head *i-shumba* falls down in a pretended fit whilst the remainder go away from her and continue dancing.

This dance may also be carried out on any evening should the head of a kraal or a man be seriously ill, but, in other cases of sickness, instead of this dance, sacrifices are offered to the ancestral spirits. With the Banyai, Bananzwa, and probably the Makalanga, tribes, an *i-shumba* girl is only allowed to marry a man from the kraal of the *i-shumba* woman who initiated her. Needless to say, the power of the old *i-shumba* women was very strong and harmful. Natives deny, however, that this is the custom now.

11. Ordeals.—*Trial by Ordeal.*—I have heard of no ordeals amongst the Amandebele, but they are common amongst all the tribes of Mashonaland, and there are several different trials. One—*M'tcyo*—is the greatest trial of all, and is used where a person has been smelt out as a witch and as having caused the death of people or animals.

The *M'tcyo* is a noxious mixture made from the castor oil bean, and mixed with some drug supplied by the witchdoctor who did the smelling out. Every doctor has his own favourite drug, and very few of them are known to the ordinary native, but I know that the excrement of the hyena forms a portion of the mixture in all cases. The victim is taken close to a stream near or at the kraal of the person whom he or she (usually she) is supposed to have bewitched and killed. She is then made to stand in a stooping position, and the doctor pours the mixture into a wooden dish, which is held by the son or nephew of the accused to her lips, and she has to drink until she vomits or purges. If the former then she is innocent, if the latter, guilty. As many as twenty plates full are given. There was a case in which a women was made to drink twenty-four plates full of the mixture; she vomited repeatedly, but the witchdoctor said her evil spirit was strong and continued the doses, until the result that at the twenty-fourth plateful she purged and was proclaimed guilty. The woman, not thinking she had had a fair trial, went to a magistrate or Native Commissioner, and, needless to say, the parties concerned along with the witchdoctor were punished. The above trial is similar to the poison trial of West and Central Africa. (See 322, *Holub*, vol. ii, a similar ordeal is described amongst the Barotse.)

Boiling Water Trial (*Nyikisa*).—This trial is used in cases of theft. As usual, the witchdoctor is first consulted, and when he has found the victim, the person who has lost goods or grain proceeds to the victim's kraal with a brass ring or hoe, and simply says *da ku nanga*, I smell you out. A meeting of the headmen is then called and the accused is given the chance of going through the trial by ordeal of the boiling pot, or of paying damages. If he elects to go through the trial, a pot is put on the fire three-quarters filled with water and brought to the boil. A white stone or brass ring is then put into the pot and the accused has to dip his hand and arm into the pot and take it out. If, when the chief takes hold of

his arm when withdrawn from the pot, the skin comes off, then he is guilty, but if not, then innocent. I have personally seen a case where not the slightest harm came to the accused; the water was at boiling point when taken from the fire, and not five seconds elapsed before the accused put in his hand. I cannot account for this unless it is true that the natives have a drug which they put on their arm before the trial takes place. It is enough that it can be done, and there must be some reason for it. I may be slightly superstitious myself, but I am not prepared to accept the opinion of a certain missionary, who, when I told him of this, informed me that he had also seen it done, and put it down to supernatural agency. The above trial is also used in cases of adultery.

Boiling Water Trial.—This is performed in the following way. Two pots of water, one cold and the other boiling hot, are prepared. Six small pebbles are placed in the boiling water. The accused has then to take a live fowl and place its feet in the boiling water and then in the cold. If the feet are burnt it is evidence against the accused, who is then required to take the pebbles—one at a time—out of the hot water and place them in the cold water. The whole hand and wrist are immersed in the process, and if the accused becomes scalded his guilt is assured.

The Rupadza or Fire Trial.—This is not so much practised, but was used in cases of adultery and theft.

A worn out hoe is made red hot in the fire and accused has to lick it with his tongue; if the skin comes off he is guilty, if not he is innocent.[1]

Basori Tribe (North-West Rhodesia).—There are no witchdoctors in the neighbourhood of Kasisi (the Basori tribe), the nearest being amongst the Ba-renje tribe where they are called *balaye*. They are not known to use bones, but cure sickness with the scales off an animal with a long tail, which is found in secluded spots after heavy rains. This animal they call *n-k-aka* (the bones used by other tribes they call *nkakata* which is almost the same as the word *akaṭa* used by the Makalanga.) It is supposed to come direct from heaven. For this reason and because it appears only after heavy rain, its scales are supposed to be an infallible cure for sickness. The scales are strung on to a belt and passed over the shoulder of a sick person so as to come round under the arm on the other side.

The Rev. Father Torrend saw one of these animals in the vicinity of Tete.

They also have an operation called *ku-sonda*, to smell, to divine. This is carried out by means of the handle of an axe or hoe. The man who smells rubs this handle against the ground, then knocks on it with his index finger just as we knock at a door. He then pretends to hear the spirits talking from the ground. *Ku-sonda* is practised principally in cases of sickness and common ailments.

There are dice throwers at Sena on the Zambesi.

[1] "We read in Nicephorus, that Chunegunda, the wife of Henricus Bavarus, emperor, suspected of adultery, trod upon red hot coulters, and had no harm. Pius Secund in his *Description of Europe*, c. 46, relates as much, that it was commonly practised at Diana's temple, for women to go barefoot over hot coals, to try their honesties, etc." From Burton's *Anatomy of Melancholy.*

In the Rev. Father Torrend's *Comparative Grammar, etc.*, on p. 291, there is an account of the witchdoctors of the Middle Zambesi.

British Central Africa.—"Neither the divining tablets of the Mashona, nor the knuckle bones of sheep and goats seem to be used—their place is taken by small pieces of wood (*mpinjiri*), some neatly cut into shape, and the claws of the tortoise, which are divided into four pieces—the front or tip of the claw being halved to make a male and a female piece (which are marked on the underside) and in like manner the back." (*British Central Africa*, by A. Werner.)

Bushmen.—Dr. Poch informed me that at Oas and Sidoni he had seen divining bones. The female bone was thinner and more oblong than the male. They were used by the Bushmen of these parts in the same way as the Bantu tribes used them. First they were rubbed with various kinds of medicine and then blown up before being cast upon the ground.

At Oas and Zachas he asked the Bushmen if they had any such things as bull-roarers. They said no, but they knew very well what was meant, and they could make him some if he wanted them. They made him two.

"As a precaution against sickness the Bushmen carried their medicinal roots and charms strung on a string or a cord of sinews and worn as a necklace." (*The Native Races of South Africa*, by G. W. Stow.)

"The Bushmen have no idols or priests. They reckon with their deities directly, with charms made of wood, roots, and so forth, which they wear around their necks. Upon the whole the Bushmen are much less superstitious, or rather their superstitions are less fantastic than those of the negroes generally." (*The Negro Races*, by Jerome Dowd.)

"Like all South African natives, the Masarwas" (the Bechuana name for Bushmen) "are very superstitious. Every man carries a set of dollos or charms, consisting of five pieces, which are consulted on every possible occasion. These dollos are composed of two hoofs of the wildebeeste, two longish pieces of bone or horn, and a small bone of an antelope. To consult them, a man clears a small place on the ground, then he takes them in his hand like dice, uttering some kind of invocation, and then he throws them on the ground. From the position of the dollos he divines what he wants to know in accordance with rules which are generally understood by them. They are remarkably clever in their prognostications." (From the *Report of the South African Association for the Advancement of Science*, Johannesburg, 1904, p. 315.)

"While we sat down, one of the Masarwas took from his neck four curious looking pieces of ivory, three triangular in shape, the fourth long and rather pointed at either end. All four pieces were flat and had a sort of pattern rudely worked upon them. Shaking the ivory pieces in the hollow of his hands, the Masarwa cast them on the ground, and after gazing intently for a moment, all three burst into a torrent of their extraordinary clicking language, pointing at the same time earnestly at the dice, for such I may call them." (*Gun and Camera in Southern Africa*, by H. A. Dryden, 288.) (See 349, 350, *Holub*, I.)

Hottentots.—"In each family the ancestors are considered almost as household gods. One makes prayers to them and offers them gifts."

"By the side of the *surri*, whose functions connect him more or less with the worship of the good gods, are found sorcerers, among whom Hahn places the makers of rain . . . . The Hottentots extremely fear their incantations, and attribute to them almost all the misfortunes which strike their persons or their cattle; they have recourse to a vast number of amulets and practices to protect themselves against them." (*The Pigmies*, by A. de Quatrefages.)

The Physician.—The healing art is practised most purely by the *Mang' anja.* Some of the methods are these:—Cupping by means of a horn whose end is stopped by bees' wax. The blood that fills the horn is thrown to the ground—the disease falls with it. Counter-irritation: sometimes the physician will be content with making a number of incisions, chiefly along the legs; on other occasions he will rub in vegetable ashes.

But a great part of the treatment is by charms. This will be understood when we remember that diseases are supposed to be caused by witchcraft.

The Sorcerer.—"This brings us to speak of a more terrible member of the learned profession, viz.:—the sorcerer, and diviner, or witch doctor (*nichisanjo*). The 'cup wherewith he divineth' is called *chisanjo* . . . . A person goes to him, and puts as many questions as he likes, and receives answers . . . . While these diviners give their response they shake a small gourd filled with pebbles, and inspect pieces of stick, bones, glass, pottery, etc., which are in another gourd. They often give sound advice, and they pretend to get it by this inspection, as it otherwise might give offence to their clients." (*Africana*, the Revd. Duff Macdonald, M.A., B.D.)

Pondoland.—"In Pondoland I have seen the diviner place the bones in a small sort of calabash which is well shaken. The diviner then chews some medicine and puffs on the bones. After this he throws them on the ground as if they were dice. The diviner notes carefully how the bones lie, and probably throws them a second or third time, till he is satisfied with the indications offered. He pretends to tell by the way the bones lie the direction in which the cattle are straying or the abode of the sorcerer." (*The Essential Kafir*, Kidd.)

Basutoland.—Divining bones or *Ditaula.* These are generally made amongst the Basuto of the leg bones of sheep, baboons, or even of carnivorous animals. They are usually tied together, and by a sort of circular motion are thrown off the string on to the ground. Most of those I have seen were made of the bones of baboons, and these animals had been killed for the purification of sick people. The doctors usually chew some sort of plant, and blow the juice over the bones before they cast them on the ground in order to make the spell work. Generally one throw of the bones is not enough, and two, or sometimes three, are required before the spell works properly, or before the doctor will venture an answer.

Very often he fails and then he has recourse to the excuse that the accused person, supposing it is a case of smelling out, has much stronger medicine.



FIG. 1.



FIG. 2.

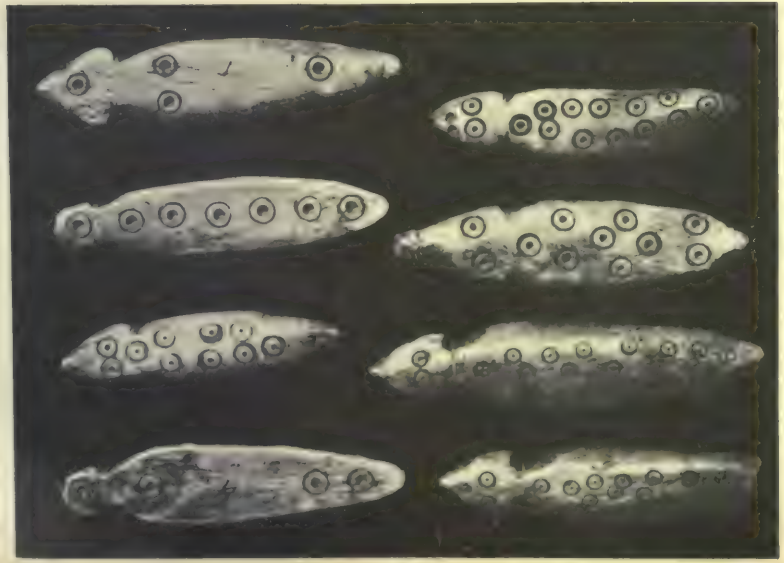


FIG. 3.

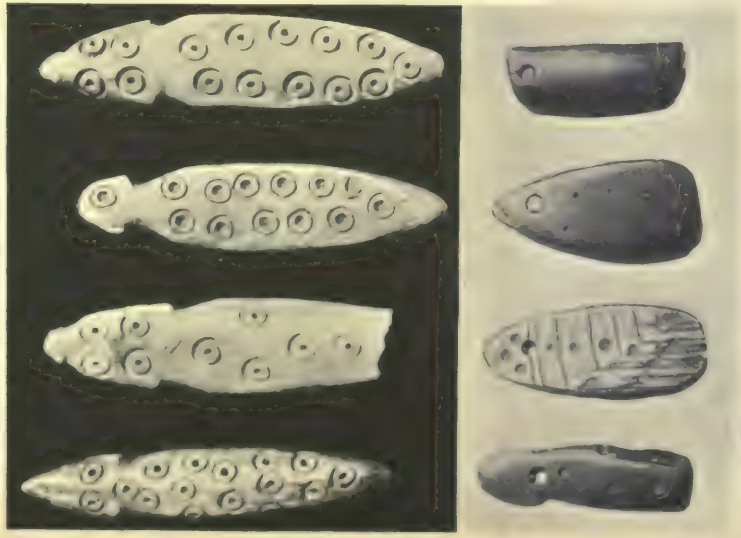


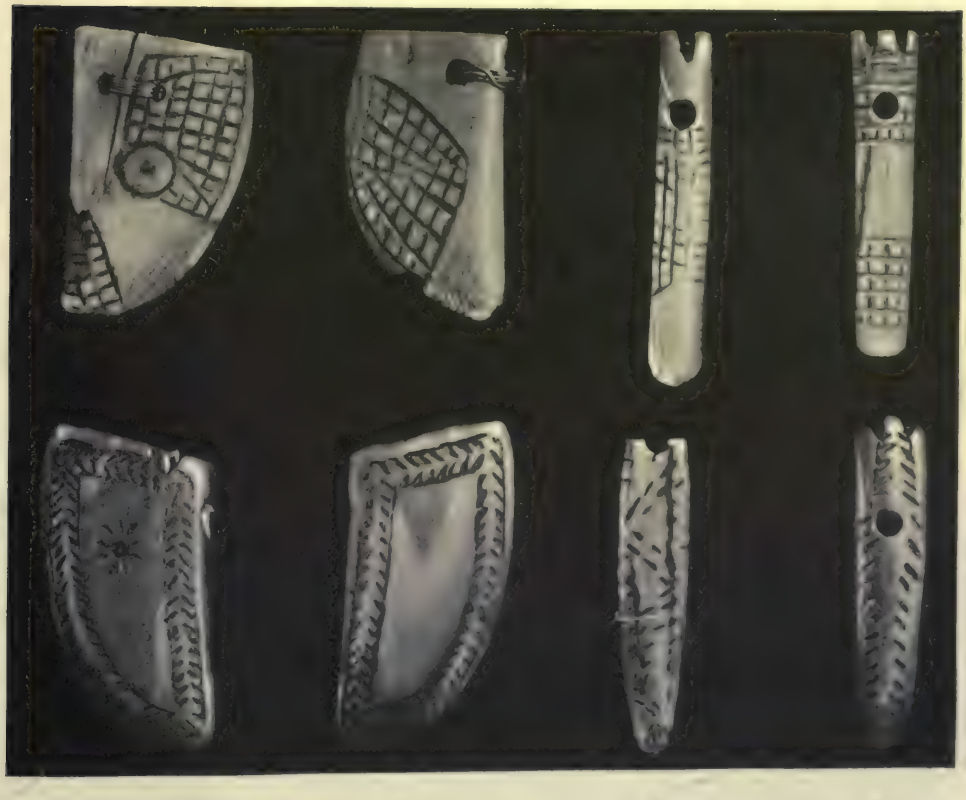
FIG. 4.



FIG. 1.



FIG. 2.



1 2 3 4

FIG. 3.

NATIVE WITCHCRAFT AND SUPERSTITION IN SOUTH AFRICA.

MISCELLANEA.

PROCEEDINGS OF THE ROYAL ANTHROPOLOGICAL INSTITUTE, 1909.

January 26th, 1909.

Annual General Meeting (see page 1).

February 9th, 1909.

Ordinary Meeting. Prof. W. RIDGEWAY, President, in the chair.

The election was announced of Dr. W. H. BROAD, Messrs. C. O. BLAGDEN, A. R. BROWN, J. L. COPLAND, F. H. HARWOOD, A. R. WRIGHT and MALIK MUHAMMAD DIN, as Ordinary Fellows of the Institute.

The Rev. J. W. HAYES read a paper on Deneholes, illustrated by lantern slides (p. 44).

The paper was discussed by Messrs. G. N. CLIFT, MILLER CHRISTY, REGINALD A. SMITH, Sir RICHARD MARTIN, Messrs. W. J. GREATHEED, H. C. VISICK, F. W. READER, C. SALAMAN, H. N. HUTCHINSON, S. H. WARREN and Mr. HAYES replied.

February 23rd, 1909.

Ordinary Meeting. Prof. W. RIDGEWAY, President, in the chair.

The election was announced of Messrs. W. D. BOWDEN, A. B. COOK, and J. H. MARSHALL as Ordinary Fellows of the Institute.

Dr. W. ALLEN STURGE, M.V.O., read a paper on "Man and the Glacial Period," illustrated by specimens.

The paper was discussed by Prof. BOYD DAWKINS and Sir HENRY HOWORTH, and Dr. STURGE replied.

March 9th, 1909.

Ordinary Meeting. Mr. HENRY BALFOUR, Past President, in the chair.

The election was announced of Messrs. H. HIGGINS, B. NICHOLLS and the Rev. E. SMITH, as Ordinary Fellows of the Institute.

The TREASURER gave an exhibition of new instruments for measuring stature.

Sir HENRY HOWORTH, on the invitation of the CHAIRMAN, having taken the chair,

Dr. C. G. SELIGMANN read a paper on the Veddas, illustrated by lantern slides and specimens.

The paper was discussed by Prof. BOYD DAWKINS, Dr. RIVERS, Dr. HILDBURGH, Mr. SMURTHWAITE, Dr. CAMPBELL, Mr. SKEAT and the CHAIRMAN and Dr. SELIGMANN replied.

March 23rd, 1909.

Ordinary Meeting. On the motion of the Treasurer, Prof. BOYD DAWKINS, F.R.S., took the chair.

The election was announced of Mr. ABRAHAMS as an Ordinary Fellow of the Institute.

Miss N. F. LAYARD exhibited a collection of implements of "the older series" from Ireland, and illustrated her remarks with lantern slides (see *Man*, 1909, 54).

The paper was discussed by Dr. CORNER, Mr. WARREN, Mr. READER, Mr. VISICK and the CHAIRMAN.

The TREASURER having taken the chair,

The Rev. Dr. BROWN gave a paper on Melanesians and Polynesians.

April 20th, 1909.

Ordinary Meeting. Prof. W. RIDGEWAY, President, in the chair.

Mr. WALTER MCCLINTOCK gave a lecture on the Blackfoot Indians, illustrated by lantern slides.

At the request of the PRESIDENT, His Excellency the AMERICAN AMBASSADOR proposed a vote of thanks to the lecturer.

May 4th, 1909.

Ordinary Meeting. Mr. J. GRAY, Treasurer, in the chair.

The election was announced of Mr. ERNEST BLISS as an Ordinary Fellow of the Institute.

Mr. A. L. LEWIS read a "Note on a Stone on the Rock of Cashel," illustrated by lantern slides (see *Man*, 1909, 107).

The communication was discussed by Mr. MERIVALE, Mr. PARKYN, Mr. HAYES, Mr. SMURTHWAITE and Prof. BOYD DAWKINS.

Mr. A. L. LEWIS read a paper on "Some Irish Stone Circles," illustrated by lantern slides (p. 517).

The paper was discussed by Prof. BOYD DAWKINS, Mr. T. RICE HOLMES, Mr. SMURTHWAITE, Mr. YOUNG, Mr. SEFTON JONES, Mr. PARKYN, Mr. HAYES and the CHAIRMAN. Mr. LEWIS replied.

May 18th, 1909.

Ordinary Meeting. Prof. W. RIDGEWAY, President, in the chair.

The PRESIDENT announced that the Council proposed to adopt a scheme for the affiliation of Anthropological Societies at the Universities, and the new By-Law drafted for this purpose was read by the SECRETARY.

Dr. W. L. HILDBURGH read a paper on "Some Tibetan and other Himalayan Charms and Amulets," illustrated by specimens and lantern slides (pp. 386, 397).

The paper was discussed by the PRESIDENT and Mr. A. R. WRIGHT.

June 8th, 1909.

Ordinary Meeting. Mr. J. GRAY, Treasurer, in the chair.

The TREASURER exhibited a series of slides of the Palæolithic skulls lately discovered in France.

The exhibit was discussed by Prof. BOYD DAWKINS, Dr. WRIGHT, Mr. PARKYN and Mr. SMURTHWAITE.

Dr. KEITH read a paper on "Prehistoric Human Remains" from various parts of England, illustrated by specimens.

Mr. NEIL BAYNES exhibited a series of flint implements found in Anglesey in association with some of the skulls exhibited by Dr. KEITH.

The paper was discussed Prof. BOYD DAWKINS, Mr. PARSONS, Dr. WRIGHT and Mr. GRAY, and Dr. KEITH replied.

June 29th, 1909.

Ordinary Meeting. Prof. W. RIDGEWAY, President, in the chair.

The election was announced of Mr. W. BARNARD, Mr. A. M. BLACKMAN, Rev. S. S. DORNAN, Mr. A. M. HOCART, Mr. H. MYERS and Captain SPENCER as Ordinary Fellows of the Institute.

The PRESIDENT referred to the death of Prof. D. J. CUNNINGHAM, Past President, and paid a tribute to his memory.

Mr. A. R. BROWN read a paper on "The Social Organisation of the Andamanese." The paper was discussed by the PRESIDENT, Dr. RIVERS, Prof. VON LUSCHAN, Mr. GOMME, Mr. LEWIS, Dr. WRIGHT, Mr. RAY and Mr. PARKYN, and Mr. BROWN replied.

November 16th, 1909.

Ordinary Meeting. Prof. W. RIDGEWAY, President, in the chair.

The election was announced of the MASTER of BELHAVEN, Messrs. W. BROWN, T. DALLEN, P. ENTWISTLE, D. SUNDAR, G. F. HODGSON, the Rev. J. K. MACGREGOR, Major MELDON, Major ROBERTSON MILNE, Mr. J. W. PAGE, Prof. C. J. PATTEN, Messrs. R. QUINNELL, S. SLEFRIG and Dr. SPEARMAN as Ordinary Fellows of the Institute.

Mr. F. G. PARSONS, F.R.C.S., read a paper on the Rothwell Crania, illustrated by lantern slides.

The paper was discussed by Dr. KEITH, Dr. GLADSTONE, Dr. SHRUBSALL, Dr. WRIGHT, Prof. THANE, the VICAR of ROTHWELL, the TREASURER, and the PRESIDENT, and Mr. PARSONS replied.

November 30th, 1909.

Ordinary Meeting. Dr. A. C. HADDON, F.R.S., Past President, in the chair.

The election was announced of Messrs. E. DAYRELL, W. MARR and D. WRIGHT as Ordinary Fellows of the Institute.

The Rev. R. A. GATTY read a paper by himself and Canon GREENWELL on the "Pit Dwellings of Holderness," illustrated by specimens and lantern slides.

The paper was discussed by Prof. BOYD DAWKINS, Mr. LEWIS, Mr. ROUTLEDGE, Dr. WRIGHT, Mr. WARREN, the CHAIRMAN, Mr. READER, Mr. SMURTHWAITE, and Mr. GATTY replied.

Mr. CROSS exhibited a stone knife of comparatively modern date from the Shetland Islands.

December 14th, 1909.

Ordinary Meeting. Mr. HENRY BALFOUR, Past President, in the chair.

The election was announced of Messrs. E. H. CHOLMELEY and R. H. WILLIAMSON as Ordinary Fellows of the Institute.

The CHAIRMAN announced that the President had appointed Messrs. R. H. PYE and O. M. DALTON as Auditors of the Institute's accounts.

Mr. E. TORDAY read a paper entitled "Notes on a recent Ethnographical Expedition in the Congo Free State," illustrated by lantern slides, specimens and water colour sketches.

The paper was discussed by Dr. HADDON, Mr. JOYCE, Mr. ROUTLEDGE, Dr. KEITH, Mr. HODSON, Mr. DALTON, Mr. TABOR, Dr. CAMPBELL, Miss WERNER and the CHAIRMAN, and Mr. TORDAY replied.

ROCK PICTURES IN NORTH KORDOFAN.

BY H. A. MACMICHAEL, Deputy Inspector, Sudan Government.

DURING a tour in Northern Kordofan in 1909, I found some rock pictures which deserve description. Unfortunately my attempts to photograph them proved abortive, and I can only subjoin tracings of the copies which I made on the spot in pencil. Though I took what care I could to represent exact proportions, I am conscious of the very unsatisfactory nature of such rough work.

The figures chosen for copying were those that were most distinct, but all had suffered from time and exposure and were wholly or partially indistinct.

The most useful method of treating the subject will be to compare these drawings with those described by MM. Flamand, Carette-Bouvet, etc., and to leave the question of their origin to the reader.

The main sites on which the pictures occur are two:—Firstly, at Jebel Haráza, a rocky chain of hills some 95 miles due north of Bara and about 145 miles W.S.W. of Omdurman, inhabited by a mixture of Arab and black (probably Nuba) possibly superimposed upon another race or modified at least by alien blood[1]; secondly, at J. Afárít ("hill of Goblins") about 30 miles E.S.E. of Foga in Western Kordofan, in an uninhabited district occupied until the latter half of the nineteenth century by the Hamar Arabs, and still within their tribal boundaries.

The pictures at J. Haráza had not, I believe, been previously noticed by Europeans and were only known to a very few of the natives themselves (unless they lied). Those at J. Afárít had been seen by several officers, but no report or description had been made.

As the name J. Afárít suggests, the pictures there are accounted somewhat uncanny in their origin, and I am told that reluctance has sometimes been expressed by the Arabs to visit the spot; personally I found no trace of such a feeling either at J. Haráza or J. Afárít,

The pictures at J. Haráza fall into three categories:—

(1) A highly finished work somewhat resembling the pictures described, by M. Flamand in his article entitled "Les pierres écrites (Hadjrat Mektoubat) du Nord de l'Afrique et spécialement de la région d'In Salah"

[1] Vague traditions extant say that a certain people called "abu Gonaán" once lived at J. Haráza, but nothing definite is known of them. Another people to whom any relics of a past age that may be found in N. Kordofan are commonly ascribed is the Anag. Whether they include "abu Gonaán," are included by them, or are quite distinct, is not clear. Allusions to them in Quatremère's *Memoires Géographiques et historiques* show that about the end of the seventh century A.D. they lived beyond a barren waterless tract some days away from the Nile, and the allusion may well relate to J. Haráza and the neighbouring hills.



FIG. 1.—J. SHALÁSHI. IN RED PIGMENT. PARTLY OBLITERATED BY RAINS.

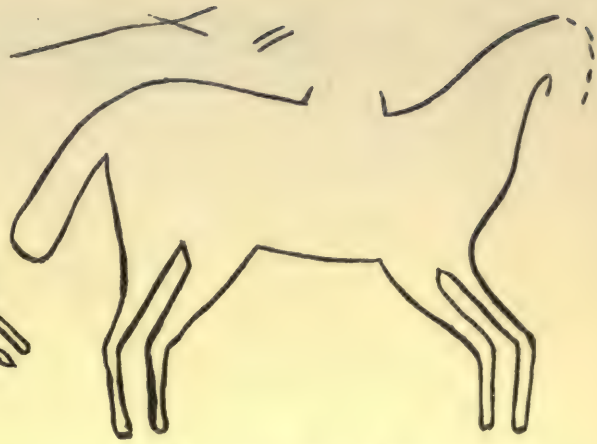
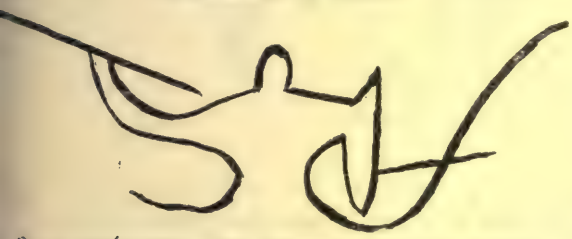


FIG. 2.—J. SHALÁSHI. IN RED PIGMENT.



. 3.—J. SHÁLASHI. RED PIGMENT. PART OF FIGURE NLY REPRODUCED AS IT IS IDENTICAL WITH OTHERS, EXCEPT FOR SHIELD.



FIG. 4.—J. SHALÁSHI. RED PIGMENT.



FIG. 5.—J. SHALÁSHI. RED PIGMENT.



FIG. 6.—J. SHALÁSHI. RED PIGMENT.

(*L'Anthropologie*, vol. xii, 1901), as prehistoric: *i.e.*, they are of a superior workmanship and full of life and movement. The figures represented are men on horseback, giraffes, and hyenas. There are only some



FIG. 7.—J. SHALÁSHI. WHITE PIGMENT.

half a score figures in all, and they are upon the face of a slanting rock forming a part of the side and roof of a small open cave, some 30 feet up in a heap of boulders of granite known as J. Shaláshi. Some of the figures are in red, and some in white, pigment; the use of the former



FIG. 8.—J. KARSHÚL. RED PIGMENT. FADED AND INDISTINCT

colour seems common to the whole of Africa from Cape Colony to the Mediterranean, but I have seen no mention of the latter. None of these are graved.

(2) The second group almost exactly corresponds to the common "Libyo-Berber" rock pictures found over the greater part of North Africa and the Tawarek country and described, *e.g.*, by M. Flamand in vol. viii (1897) of *L'Anthropologie* ("Notes sur deux 'pierres écrites' . . .



FIG. 9.—J. KARSHÚL. RED PIGMENT. FADED AND INDISTINCT. ABOUT $\frac{1}{6}$.



FIG. 10.—J. KARSHÚL. RED PIGMENT. FADED AND INDISTINCT.



FIG. 11.—J. KARSHÚL. RED PIGMENT. FADED AND INDISTINCT.

provenant d'El Hadj Mimoun région de Figuig (Sud Oranais)." The workmanship is very rough and inartistic, and suggests imitation of those at J. Shaláshi. They are on the roof of a small cave at the foot of a hill called J. Karsbúl. The figures portrayed are mounted men and camels. All the work is in red pigment and is faint and indeterminate.

(3) The third group is very roughly chipped on lumps of granite that lie strewn on the side of a hill called J. Kurkeila. The method of chipping may have been the same as that described by MM. Carette-Bouvet and

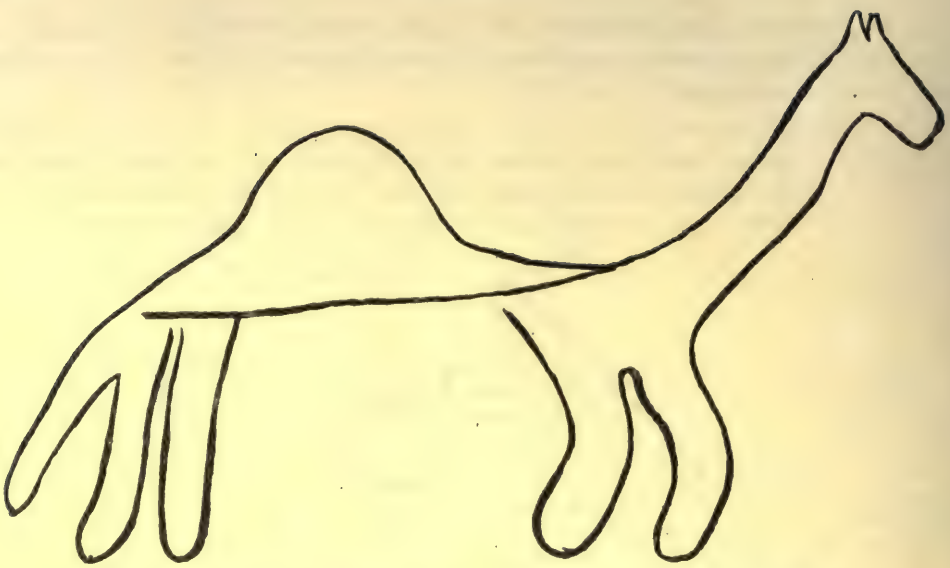


FIG. 12.—J. KARSHÚL. RED PIGMENT. FADED AND INDISTINCT. ABOUT $\frac{1}{4}$.

Neuvill in "Les pierres gravées de Siaro et de Daga Beid (Somal)," *ide* vol. xvii (1906) of *L'Anthropologie*. No colouring has been attempted, and only animals are represented.



FIG. 13.—J. KURKEILA. CHIPPED ON GRANITE.



FIG. 14.—J. KURKEILA. CHIPPED ON GRANITE.

That both paintings and engravings are found at J. Haráza is not of course remarkable; the same occurs in the Pyrenees and South Africa (*vide* "On Rock Engravings of

animals and the human figure found in South Africa," by L. Péringuey in the *Transactions of the S. African Philosophical Society*, vol. xviii, part 4).



FIG. 15.—J. KURKEILA. CHIPPED ON GRANITE.



FIG. 16.—J. KURKEILA. CHIPPED ON GRANITE.

The distance between J. J. Shaláshi, Karshúl, and Kurkeila is only a mile or two, all being in the Haráza range.

The pictures at J. Afárít are in blackish pigment and on the slanting face of an overhanging rock some 15 feet up in a heap of boulders almost exactly like that pictured by MM. Carette-Bouvet and Neuville in the article alluded to above. The men carry shields here. Both at J. Haráza and J. Afárít the figures are of an evidently conventionalized type of pictography.



FIG. 17.—J. AFÁRÍT. DARK OR BLACKISH PIGMENT.
NOT IN OUTLINE BUT IN SILHOUETTE.
ABOUT 10 × 10 INCHES.

It is notable that Prof. Gautier (*vide* his "Gravures Rupestres Sud Oranaises et Sahariennes" in *L'Anthropologie*, vol. xv, 1904) found at Aïn Sefra in the neighbourhood of similar rock pictures just such conical circular tumuli of stones as do exist also at J. Haráza; I could, however, find nothing under the stones, although I excavated some 7 or 8 feet down.

There are no inscriptions or hieroglyphics that I could find at either J. Haráza or at J. Afárít.

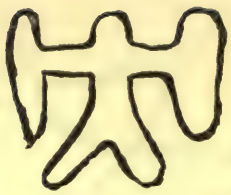


FIG. 18.—J. AFÁRÍT.
DARK OR BLACKISH PIGMENT.
IN SILHOUETTE.
ABOUT 4 × 4 INCHES.



FIG. 19.—J. AFÁRÍT. DARK OR BLACKISH PIGMENT. IN SILHOUETTE.
SIZE A—B ABOUT 6½ INCHES;
C—D ABOUT 5½ INCHES.

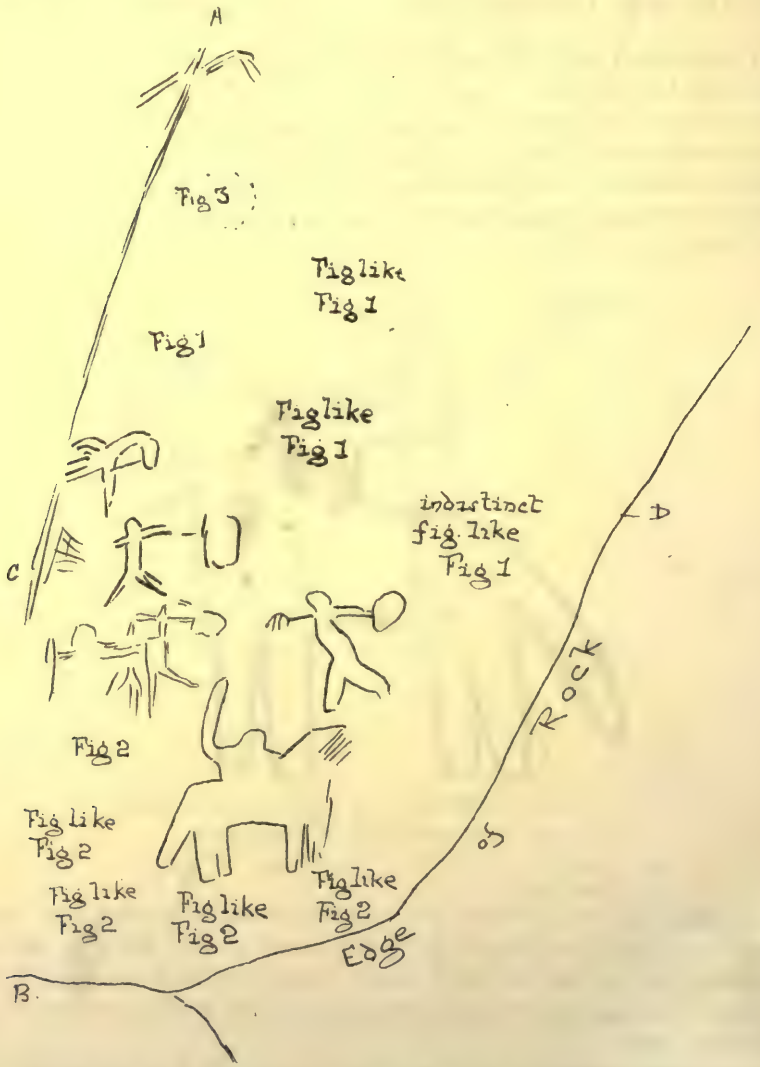


FIG. 20.—J. AFÁRÍT. GENERAL PLAN OF ROCK PICTURES.
FIG. 1 = FIG. 17; 2 = 18; 3 = 19.
SIZE: A—B ABOUT 60 INCHES; C—D ABOUT 25 INCHES.

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NOTE.—*The Numbers in ordinary type refer to the papers; the numbers in Clarendon type are the reference numbers of* MAN, 1909; *where necessary the page references to* MAN *are added in brackets. For collected references see especially Africa, America, Archæology, Asia, Australia, Craniology, England, Europe, Folklore, India, Ireland, Languages, Magic, Obituary, Oceania, Physical Anthropology, Religion, Sociology, Technology.*

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ERRATA.

Page 209, n. 1, refers to "nsibidi" not to the "Nyoga-script." *For* "Mausfeld" *read* "Mansfeld," and *for* "Eksi" *read* "Ekoi."

„ 212, l. 20, *for* "have" *read* "had" twice and delete the comma at the end of the line. Line 43, *for* "urukiket" *read* "urukikot."

„ 213. *For* Figs. 1—2A *read* 1—29.

„ 215. In Fig. 39 the two parts of the calabash should be the same size.

„ 217. Fig. 47 *should be*

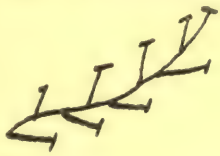


Fig. 62 *should be*

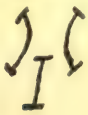


„ 218, 95. *For* "itnew" *read* "ituen."
In last line *for* "or" *read* "cf."

„ 220. Fig. 96 *should be*



Fig. 98. "k" refers to a sign unfortunately omitted at the foot of the diagram and not to that to which it is attached. This sign is



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